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INDIVIDUALIZED READING VERSUS A BASAL READER PROGRAM IN RURAL COMMUNITIES, A SECOND YEAR--GRADES ONE AND TWO.

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THE EFFECTIVENESS OF THE INDIVIDUALIZED READING PROGRAM OF COOPERATIVE RESEARCH PROJECT-2673 WAS EVALUATED. THE STUDY REPEATED THE PROGRAM IN MANY OF THE ORIGINAL CLASSES AND EXTENDED THE METHOD TO NEW FIRST-GRADE CLASSES. THE ACHIEVEMENT OF THESE CLASSES WAS COMPARED WITH THAT OF FIRST GRADES TAUGHT BY THE BASAL READER METHOD. THE STUDY CONTINUED THE INDIVIDUALIZED METHOD THROUGH SECOND GRADE FOR THOSE PUPILS WHO HAD RECEIVED INSTRUCTION BY THIS METHOD IN THE FIRST-GRADE STUDY. THE ACHIEVEMENT OF THESE CLASSES WAS COMPARED WITH THAT OF SECOND-GRADE CLASSES TAUGHT BY THE BASAL READER PROGRAM. NEW TEACHERS ATTENDED A PRESCHOOL WORKSHOP. FOR THE TEST PERIOD OF 140 DAYS, THE INDIVIDUALIZED PROGRAM USED THE SPEECH-TO-PRINT-PHONICS PROGRAM WHILE THE BASAL PROGRAM UTILIZED THE SCOTT-FORESMAN SERIES. PRE-, MEDIAL-, AND POST-TESTS WERE ADMINISTERED TO THE FIRST AND SECOND GRADERS. A MULTIVARIATE ANALYSIS OF COVARIANCE WAS USED TO ANALYZE THE DATA. FIRST GRADERS WITH PRESCHOOL EXPERIENCE PREFORMED BETTER THAN THOSE WITH NO PRESCHOOL EXPERIENCE IN READINESS SKILLS. THE PREINSTRUCTIONAL ACHIEVEMENT OF THE INDIVIDUALIZED SECOND-GRADE CLASSES WAS SUPERIOR TO THAT OF THE BASAL CLASSES. SEX DIFFERENCES WERE FOUND ON SOME OF POST-TEST MEASURES. THE INDIVIDUALIZED SECOND-GRADE GROUPS SCORED SIGNIFICANTLY HIGHER ON ALL POST-TEST MEASURES, EXCEPT ON TWO ARITHMETIC TESTS. ADDITIONAL RESULTS, CONCLUSIONS, AND REFERENCES ARE INCLUDED. (BK)

INDIVIDUALIZED READING VERSUS A BASAL READER PROGRAM IN RURAL COMMUNITIES

A SECOND YEAR - GRADES ONE AND TWO

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Cooperative Research Project No. 3179

SEPTEMBER 1965 - MAY 1966

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A Second Year - Grades One and Two

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Individualized Reading Versus A Basal Reader Program In Rural Communities, A Second Year - Grades One and Two

PROBLEM

The original study, Project 2673, supported by the Cooperative Research Program of the United States Office of Education, was part of the national cooperative research project designed to study first grade reading on a national scale. The 1964-65 full-year program compared twelve first grade classes taught by Individualized instruction and ten Basal Reader first grade classes.

The Individualized reading approach was based on a comprehensive program of phonetic skills, word recognition practice, comprehension skills and a program of story reading. This method differs from the popular concept of Individualized reading which is largely a program of story reading unsupported by a skills program.

The Basal Reader program, probably the most widely used approach to reading instruction throughout the country, provides reading instruction through basal textbooks, teachers' guides and supplementary materials. The system is based on a controlled vocabulary and prescribed systematic skills program, and is usually conducted within the organizational pattern of the three-group ability plan. The Basal Reader program was selected as a control for the experimental Individualized approach since it is the reading method employed by practically all teachers in Vermont schools. Also, this method is a standardized programmed and graded system made stable by research and acceptance by educators.

The 1965-66 proposed research study was contracted by the Cooperative Research Program of the United States Office of Education to study the expansion of the Individualized Reading approach of Project 2673 (1964-65) as follows:

First Grade: To repeat the Individualized Reading program in the 1964-1965 first grade classrooms and extend the program to new first grades. To compare results with first grade classes taught by the Basal Reader program.

Second Grade: To extend the research to compare the Individualized Reading and Basal Reader methods at second grade level. The study was planned to follow the pupils of the 1964-65 project to determine the continued effectiveness of the Individualized Reading method as compared with the Basal Reader program at the end of grade two.

The new study proposed another in-service workshop to orient teachers to the Individualized method and prepare teaching materials. It was hoped that classrooms would be better supplied with library materials.

Significance of the Study

- The results of the original research, Project 2673, produced highly significant differences in achievement, favoring the Individualized Reading method. These findings indicated that this Individualized Reading program should be extended to second grades to determine the continued effectiveness of the method.

- The wide differences in the results of the two methods indicated that the experimental method should be studied further under research controls at first grade level - to evaluate the consistency of the results.

- School administrators and parents in the cooperating towns requested that the Individualized program be extended and studied at second grade level, especially for those pupils who had participated in the first grade project.

- The teacher education and supervision procedures which were built-in elements of the research project seemed essential if the method were to expand to new classes and towns where interest had developed.

- The self-help approach of teachers working in teams to improve classroom techniques and materials by sharing seemed essential if the Individualized method were to continue in the original classrooms and expand to other interested teachers. The teacher-team effort seemed worthwhile to this study, since there are few supervisors in Vermont schools.

- The federal education acts which provided for library and other teaching materials encouraged teachers to request more books and venture toward the enriched and individualized approach to teaching, but they needed aid in the location, selection and use of these new materials.

- It was hoped that the opportunities for an enriched reading program beyond the Basal materials would be provided further in these rural communities, through a second year study and the financial aid of the United States Office of Education to low income areas.

- During the past two years the professional literature has described interest and various approaches to enriched and individualized instruction. Thus it would seem valuable that this program be extended and re-evaluated.

Basic Philosophy of the Individualized Reading Program

- This study maintains the basic philosophy of Project 2673, that individualization in reading instruction is essential to provide effective learning.

- The results of that study support the thesis that a systematic basic skills program as a basis for an independent story reading program produces effective reading ability. Since word recognition and comprehension skills determine success in reading, a systematic program with practice at points of weakness and varied opportunities for reading experiences seem effective. Reading abilities in any classroom vary so that each pupil's ability and progress should be evaluated continuously from his first days in school to provide for an optimum learning rate and prevention of confusion and boredom.

- Individualized reading requires a more flexible organization than the three-level ability grouping plan common to the Basal Reader program. Grouping patterns in the Individualized program must vary according to the ability and specific needs and interests of the pupils. The teacher may direct the whole class, a small skills or interest group or tutor an individual pupil. Pupil-teams of one, two or three vary almost daily in composition as the tasks dictate.

- Independence and interest in reading and sharing stories increases as reading skills are mastered and the pupil becomes an independent reader.

OBJECTIVES

The study was designed to extend and evaluate the effectiveness of the Individualized Reading program of Project 2673 a second year.

- To repeat the program in as many of the original classes as possible and extend the method to new first grade classes. The achievement of these classes would be compared with first grades taught by the Basal Reader method.

- To continue the Individualized method through second grade for those pupils who had received instruction by this method in the first grade study. The achievement of these classes would be compared with second grade classes taught by the Basal Reader program.

The Individualized Reading method would be compared with a Basal Reader program to answer the following proposed questions:

a. Does this Individualized Reading program produce results similar to Project 2673 at first grade level when compared with Basal Reader classes a second year?

b. Does the Individualized Reading program result in higher achievement than a Basal series system when the same pupils follow the Individualized program through the second grade?

- In what areas of reading are the major differences at the end of the first grade? Second grade?
- Is there a difference in the achievement of the two treatments at the middle of first grade?
- Does one method serve the high ability pupils or low ability pupils better than the other?
- Does either method favor one sex more than the other in first grade? In second grade?

c. Is there time in the Individualized program to schedule for specific needs at first grade level? At second grade level?

  - Do pupils spend as much time on reading activities as the Basal Reader pupils?
  - Do pupils receive adequate teacher-directed skills practice?
  - Do pupils engage in as many and varied group participation activities?

d. Does the Individualized reading program provide as adequate organization and time allotment for efficient teaching, as the Basal series program? A second evaluation at first grade level. An evaluation at second grade level.

  - Does a varied flexible system of grouping for instruction produce as effective learning as the three-group ability organization?

- Are the pupil-team practice groups as effective as the individual working alone on practice exercises?
- Can the individual conferences be scheduled often enough to meet the individual child's instructional needs?
- Does the frequent exchange of team partners to fit the learning activity, equal ability to unequal ability produce as efficient learning as constant larger ability groups?
- Can the variety of learning experiences be incorporated into a smooth running program with pupils working to capacity and no time spent in idle waiting or confusion?
- Does the teacher have time to read all the materials which the pupils are reading?
- Is there time for the teacher to keep a continuous record of each pupil's progress and needs?

e. Do pupils in the Individualized program read more books than the Basal Reader pupils?

f. What is the reaction of teachers to the Individualized method?

- Do teachers plan to continue teaching by the Individualized method?
- Do teachers prefer to return to the Basal program?
- Do teachers prefer to teach by a combination of the two methods?
- Are more teachers interested to try the Individualized

instruction method?

PROCEDURES

General Plan of the Study:

The purpose of this research was to repeat the program of Individualized Reading instruction of Federal Project 2673, hopefully in those same first grade classes and extend the method to more first grades. The proposal would extend the Individualized Reading program to second grade, for those pupils who had received instruction by the method in Project 2673 and compare the results with Basal Reader classes at the corresponding grade level. The results of achievement in vocabulary, comprehension and oral reading would be compared with the progress made by first and second grade classes taught by the ability group techniques and materials prescribed in the Scott Foresman Basal Reader program.

Description of Methods and Materials:

Individualized Reading Program:

The bases of the method were programs of intensive and systematic phonics and sight vocabulary practice applied in an individualized library reading program. New skills were presented as individual pupil needs and abilities dictated.

Individualized Phonetic Program:

The teaching of letter names and the identification of phonemes in spoken words and matching them to forms in print using a variety of efficient techniques constituted the major portion of the reading readiness program.

The multiple-response technique[1] was effectively used to individualize teacher-directed activities.

1. Letter recognition
    a. Each pupil has letter cards and displays them as teacher directs.

        "This is H. Hold up your letter H."

    b. "Hold up the letter D."
    c. "Is there a J in your name? Hold up letter J."
    d. "This is capital M. Hold up your little m."
    e. "Draw a circle around P on your worksheet."
    f. "Write T on your paper."
    g. "Write M under the picture of the Monkey."
    h. Pupils may locate specific letters in sight words on charts and labels in the room, and month, day of week, etc.

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[1] Donald D. Durrell, Improving Reading Instruction, World Book Co., New York, 1956, p. 83.

2. Identification of phonemes in words.

   a. Speech-To-Print-Phonics[1] procedure

      Teacher displays a card

cake	make	rake
1	2	3

      "These words end with ake - it says 'ake'

      Hold up the number of the word that tells something to eat. Read the word."

   b. Hold up the letter that is at the beginning of this picture."

      picture of dog.

   c. "Which letter comes at the beginning of house?"

   d. "Draw a circle around the letter at the beginning of rabbit."

   e. "Copy two words from your dictionary that begin like monkey."

   f. "Hold up your t card when you hear a word that begins with t."

   g. "Copy two words from your book that begin with the same sound as bird."

   h. "Copy from your dictionary the names of two animals that begin like book."

   i. "Find 3 pictures that begin with p."

   j. "Read from your book a word that begins like - run."

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[1] Donald D. Durrell, Helen A. Murphy, Speech-To-Print-Phonics, Harcourt, Brace and World, N.Y., 1964.

k. "Write the first letter in the words I say."

Similar teacher-directed multiple-response activities were useful in teaching; initial blends, phonograms, final consonants, final blends and vowels.

At the first grade reading level and above, which included pupils in both the first and second years of school, the phonetic and structural analysis skills were presented to individuals or groups of 2 or 3 pupils. As the range of abilities and needs widened rapidly pupil-team practice became an effective learning technique. Teachers and pupils favored the teams of two as the most fruitful grouping, since response opportunities were frequent and distractions less likely to develop than in larger teams.

Teams of two worked together orally to determine the correct responses to worksheet exercises and each wrote the responses on his paper. This provided effective practice for mastery of the letter names and sounds in words early in the first grade. Before pupils were able to write answers, they responded on overlays of old x-ray sheets, so that worksheets were reused by other teams.

Pupils worked together to determine correct answers and took turns marking the x-ray papers. When the exercise was completed they checked their answers with the key on the reverse side of the job sheet.

Pupil-team activities

1. Two pupils work together to select the correct initial

consonant for each of eight numbered pictures. Each pupil copies the correct initial letter for each picture. They correct their papers from the key on the reverse side of the worksheet.

2. Pupil-teams find words in their picture or primary dictionaries.
   - Names of 2 toys that begin with the letter b.
   - Things you can eat that begin like cat.
   - It can hop and begins like run.
   - Two things you can do that rhyme with tall.
3. Pupil-teams read phonogram jingles.
   - Make a cake
     Bake a cake
     Take a cake
     To the lake
4. Pupil-teams complete phonogram jingles
   - Look for the book.
     Which book?
     The hook book.
     The took book.
     The cook book.
   - Run, run, run
     It is __________.
   - A fat cat
     Sat in a ________cat, hat, bat.
5. Workbooks and other published materials are used whenever specific pages are appropriate for the needs of teams. These materials are taken from the books, mounted on tag-board and filed by skill and reading level.

The value of this program of early intensive phonetic background had already been established and reported by Durrell[1] from his extensive research in the First Grade Reading Success Study.

The results of Project 2673 Individualized classes after two weeks of instruction were significantly superior to the Basal Reader classes at the .01 level. These differences between the two methods shown so early in the program supported Dr. Durrell's findings indicating that the intensive letter-knowledge instruction produced effective learning earlier than the more informal reading readiness program of the Basal Reader program.

The first grade Individualized classes of Project 3179 were instructed by the same readiness program which was followed by the comprehensive phonetic program, Durrell-Murphy Speech-To-Print-Phonics, to provide a solid basis of thoroughly learned phonics. These skills were essential in the independent reading program since pupils were reading different books and the teacher could not be free to present all the new vocabulary needed by each child.

The Durrell-Murphy Speech-To-Print-Phonics is a comprehensive phonics program designed to teach initial consonants and blends, final consonants and blends, phonograms, vowels and homophones. This word analysis program is based on words already in the average child's listening vocabulary. He learns to identify these

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1. Donald D. Durrell, "Success in First Grade Reading, A Summary," Journal of Education, Vol. 140, February 1958

as sight words by applying word elements in meaningful situations. The multiple-response procedure serves to create and sustain interest as well as inform the teacher of each pupil's needs.

Example: - [1]Summary of Lesson 11 - *Speech-To-Print-Phonics*

Teaching *D* as a beginning sound

Procedure: Words are printed on the board

dance *dive* *dig* *dust* *decorate*

Teacher states that here are words that tell things they might do. She reads each word and points out the initial *d* and its sound. Other groups of words, some beginning with *d* are read and children hold up the *d* card when they hear a word beginning with the *d* sound.

Animals with four legs, things that children like, children's names are the categories.

Cards with words are displayed by the teacher.

Card A.	day	hay	pay
	1	2	3

The teacher explains that all the words end with the sound of ay. Each child has number cards, 1, 2, 3. He holds up the right card to answer questions asked by the teacher (9 questions)

1. Which of these is food for horses? (2)
2. Which comes after night? (1)
3. Which do you need money for? (3)

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[1] Donald D. Durrell, Helen A. Murphy, *Speech-To-Print-Phonics*, Harcourt, Brace & World, Inc., N.Y., 1965.

While mastery of the words as sight vocabulary was not emphasized, most of the words were retained by all but the slowest learners. They also participated with high interest and generally mastered more sight words which were transferred to reading than by any other vocabulary technique.

The Speech-To-Print-Phonics program was presented to pupils in various size groups from whole-class to individuals, depending on the pupil's needs and readiness. Some follow-up activities designed for pupil teams were provided by the project director. Also a major function of the teacher in-service workshop preceding the program was preparation of instructional materials.

Teachers surveyed all available published materials and selected those phonetic exercises which provided practice in meaningful reading situations. The worksheets were mounted on oak tag and filed according to specific skill and grade level. Teachers worked in teams to share materials and ideas.

Many exercises grew out of the teacher-team efforts.

1. Plays of 2 or 3 characters, with the script made primarily of phonetic words.
2. Taped lessons with accompanying worksheets provided listening, reading and writing in the same phonetic practice.
3. Games were constructed for pupil teams.
    a. Phono - (similar to Word-O)

Pupil-leader draws a card and reads it.

"A color that begins with bl sound. Teams report if the word "black" or "blue", is on their card. Spell it and cover the word. the game is won after four words in a row are covered.

b. Matching words and pictures.

c. Put two word cards together to make the correct compound word.

"The children want to see (Grand father)"

Pupils write the word on a separate paper.

4. Practice card - phonograms

Pupil-teams make the correct word and write it on their papers.

ite

a. See it go up and up.______

The dog may__________.

b. It is cold and white.

You slide on the _____ow.

5. Teacher or pupil-leader dictates phonetic words to be written by pupil-teams.

a. "We read it. Write book."

b. "Hear the noise of the wind. Write blowing."

c. "Listen to this sentence and write the correct word on your paper. John did not ride t

school he ________.

6. Pupil-teams used a phonogram dictionary to supply matching words for pictures or answer questions. Also, they were able to make up riddles or rhymes of 2 to 6 lines.

A measure of the effectiveness of the intensive phonetic instruction of the Individualized Reading program in first grades is observed in the following comparison of the Individualized and Basal Methods on September and January tests.

TABLE I

Comparison of the Individualized Reading and Basal Reader First Grade Classes on the Murphy-Durrell Reading Readiness Test - September

Treatment	N	Phonemes I	Phonemes II	Phonemes Total	Letter Caps	Letters L.C.	Letters Total	Sounds in Isolation
Individualized	332	12.313	14.926	27.239	16.574	12.856	29.382	8.851
Basal Reader	164	11.723	14.442	26.165	15.078	11.211	26.283	7.689
f-ratio		1.988	.802	1.426	5.604*	10.005**	8.012	3.593

* - significant at the 5% level

** - significant at the 1% level

After the leveling of the intelligence factor, adjusted means were determined and compared. The Individualized classes were significantly superior in recognition of letters. The differences on the sounds in isolation and sounds in words tests slightly favored the Individualized classes but were not significant on these intial tests.

Table II compares the two treatments in achievement in phonics and word recognition after 15 weeks of instruction.

TABLE II

Comparison of the Individualized Reading and Basal Reader First Grade Classes on Durrell-Murphy Phonics Test and Detroit Word Recognition Test at the end of January 1966

		Detroit Word Rec.	Durrell-Murphy Phonics Test					
Treatment	N		Letters Caps	Letters L.C.	Isol. Sounds	Inital Con.	Final Con.	Phonograms
Individualized	332	16.752	24.839	24.260	34.079	33.185	11.038	43.453
Basal Reader	164	12.998	24.277	22.472	25.199	24.137	6.988	25.838
f-ratio		45.311**	3.979*	29.230**	146.612**	126.950**	151.582**	216.937**

*Significant at .05 level

**Significant at .01 level

Table II shows that the Individualized reading classes achieved very significantly higher than the Basal Reading classes on five of the sub-tests in the Durrell-Murphy Phonics Test and the Detroit Word Recognition Test. The difference between treatments on the recognition of capital letters was not significant. The adjusted mean for both groups was very close to the top of the test.

The f-ratios for the January tests of Project 2673 showed very similar results favoring the Individualized approach.

Greater differences might have occurred if the ceiling for these sub-tests had been higher. Many more of the Individualized pupils achieved perfect scores than among the Basal Reader pupils.

The wide differences in achievement on these tests at the mid-point of the year for both Projects is evidence of the superior effectiveness of the word skills program in this Individualized reading program over the Basal Reader system of vocabulary building skills.

The second grade phonetic program consisted of a teacher-made diagnostic check of skill mastery and concentrated practice at points of weakness. Emphasis was placed on the application of phonetic and structural analysis through the use of context clues. Few phonetic and spelling rules were taught because of the high frequency of exceptions. Practice with homophones was designed in context situations to promote skill in a multi-approach to word recognition. Skill in the use of the dictionary was developed and many opportunities for written expression provided to increase word recognition and spelling.

Sight vocabulary:

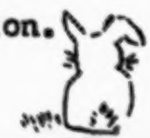
No selected list of sight words was taught. New reading vocabulary developed from library books, experience stories, phonic transfer practice, dictionaries, teacher conferences, taped read-along stories and plays, work-sheets and magazines. Pupil-teams provided much oral reading practice. New words were written to aid recall.

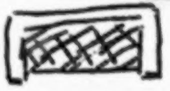
Some types of vocabulary exercises:

1. Pupils classified words into categories and wrote them.
2. Pupils added new words to their personal word books.
3. Problem words were copied 2 or 3 times to aid recall.
4. Whenever a pupil could not solve a word, he consulted

another pupil or the teacher. The new word was copied and the list of difficult words was taken to the teacher-pupil conference.

5. Early exercises incorporated the rebus technique to aid vocabulary recognition.

    Make a rabbit 

    Make a cage  for the rabbit.

    Color the rabbit brown.

    Make the cage red.

6. Early in the first grade picture dictionaries were used constantly in vocabulary development.

    Write the names of 4 things that can fly.

    Write 2 things you can do.

    After pupils had progressed to second grade reading level, the primary dictionary was introduced and comprehensive practice in its use provided.

7. Stories, plays and poems were taped. Pupils listened and then read-along with the tape. This was a popular activity particularly among the less able readers. These activities were effective in developing sight vocabulary, security and fluency in oral reading and interest in reading new books. The major strength in the technique was the guaranteed success for all pupils.

8. Pupil-teams read stories from film strips. The film

reading was followed by writing answers to the teacher-prepard comprehension check.

9. Pupil-teams played word-card games to improve fluency in word recognition.

Oral and Silent reading skills were presented and practiced through scheduled individual teacher-pupil conferences, pupil-teams and various types of groups instructed by the teacher, as determined by individual needs. Interest and reading ability were enhanced by the daily share-your-book activities. Sometimes two pupils read parts of their books to the other. Again a team might share the reading from the same book to each other or a small group. Parents were interested to follow the pupil's progress in reading ability in the home read-aloud periods and discussions. Parents were counseled on ways to encourage reading interest but were urged against drill techniques and pressures for reading. Each teacher had a list of reading skills on which each pupil's ability was informally checked continuously and progress and problems recorded. The individual teacher-pupil conferences were brief scheduled evaluation and instruction sessions which were carefully recorded and followed by appropriate practice exercises.

The reading practice materials were selected from all possible sources and supplemented by many teacher constructed materials. The materials were carefully organized in files by code, according to specific skill and reading level. Most exercises were self-directed and worked independently by pupil-teams or individuals. Pupils followed directions for the selection of the job sheet from the file, worked with a partner or alone, then corrected their own responses immediately. Teachers worked out various systems for checking accuracy in practicing the skill and self-checking.

The pupil-team technique was enjoyed by pupils and was effective in learning the skills. It was essential to free the teacher to work with individuals. Pupils in both first and second grades became quite independent in solving problems with new words, reading comprehension and locating materials. These activities became so popular and effective that pupils solved many questions together and created teacher concern that so much learning took place without their drill lessons. The independence in self-directed learning and concern for helping each other which grew from the team activities, provided help when needed and allowed individual progress without waiting for the teacher. In second grades and late in first grades pupils were able to locate materials from various sources and prepare oral or written reports in their pupil-specialties program.

Sources of reading materials:

The materials for the Individualized reading program were library books, magazines, basal readers and paper backs. Superintendents agreed that each classroom would be provided with at least $300.00 for books. Also, public libraries and children's collections supplemented the school materials. Most of the classroom libraries were much too limited to supply pupil needs.

The major problem for Project 2673 and Project 3179 was the lack of a sufficient quantity and variety of books available to the Individualized classes. The reading materials were seriously limited in three of the seventeen first grades. The second grade classes were penalized most severely since books did not arrive in three classes until November, Four classes received no source materials and a very limited number of library books during the entire year. In these classes interest in reading was noticeably less than in the classes where there were many choices in attractive books. Local and state library loans were of limited value since the books were continually being changed and teachers could not keep up with the reading checks. Pupils had to forfeit the opportunity of reading books of their choices because they weren't available long enough for all to read them.

Teachers read all books included in the instructional program. They provided a list of phrases containing the difficult words for each book. These phrases were read by the pupil before he attempted the new book independently. This technique helped to assure the pupil and teacher of the appropriateness of the book. The teachers also made a comprehenson check for each book to be answered by the child at the completion of the book, usually in writing. All books read by each child were checked by the teacher in conference. In the second grade and late in the first grade children became checkers to prevent pupils waiting for teacher-conferences. Then the teacher could check out at a single conference two or more children who had read the book. This technique provided an excellent opportunity for developing creative thinking as pupils learned to ask comprehension questions about the books.

Organization of the daily reading schedule varied among teachers and from day-to-day in a given classroom. Four or five activities were listed on the chalkboard and discussed before the work of the day began. The teacher was then freed for individual conferences and the pupils could work independently as rapidly as each was able.

Early in the first grade program teacher conferences were needed daily and for slower learners even more often. As pupils developed vocabulary and comprehension skills they grew more independent and self-sufficient. By the second grade most children were able to select their books and carry out practice activities independently and assist others in these tasks. Pupil specialties were researched and reported by pupil-teams, with teams working for two or three days on their private projects. In these activities the teacher became a consultant and a member of the team for evaluating the activity.

The Scott Foresman Basal Program:

Classes using the basal reader approach were taught by the technique presented in the teacher's manual beginning with the basic readiness program.

The materials which the teachers used were those prescribed by the publisher; readiness workbook, readers with accompanying workbooks and recommended supplementary materials, as directed by the teacher's manual.

Pupils were instructed in ability groups but teachers were encouraged to use pupil-team practice activities.

Techniques included in the teacher's manual and supplementary tests provided with the basal materials were used to aid the teacher's evaluation of pupil progress.

Time Schedule and Organization:

The scheduling of reading activities and the apportioning of time followed the pattern of the original study.

All classes of both the Individualized and Basal reader programs spent the regularly scheduled amount of time on reading activities. It was not possible to define the limits of formal reading instruction in the Individualized method since the whole language arts program was involved. However, the classes of both methods spent a comparable amount of time on reading and related activities.

The instructional program began during the week of September 15 following the initial testing program and continued for 140 days.

Individualized Reading:

First grades:

During September and October more time was necessary for teacher-directed activities for all levels of pupils, since only 8 of the 332 pupils could read when they entered school.

The following table shows the approximate distribution of time for the Individualized reading and related activities during the first six weeks of the school year.

TABLE III

Distribution of Activities by Organization of Time - September and October

Organizational	Distribution of Time by Percentage of 3 Hours		
Activities	Top Half	Third Quarter	Low Quarter
Individual	20	10	.5
Pupil-teams	40	40	30
Teacher-directed	40	50	65

Table III shows the approximate proportions of time devoted to individualized, pupil-team and teacher lead activities. During the first six or eight weeks most of the pupils needed direct teacher instruction for half the time.

The phonetic lessons were often presented to the whole class by the teacher using multiple-response techniques for individual responding. Pupil team activities provided the needed practice for about two-thirds of the pupils. The low quarter of the class were given more individual and small group teacher-led instruction and practice. Direct teacher instruction was necessary for about seventy-five percent of the time for the slow pupils in the development of phonetic ability and sight words.

Early in the program most pupils were able to work in teams about 40 percent of the time on phonetic practice sheets and vocabulary exercises.

The small teacher-led groups varied in size and pupils almost daily; Pupil-team partners were determined by the task. Sometimes pupils received help from a more able reader.

At the beginning of the program the slow pupils were able to complete worksheets independently but needed much help to progress in story books. The faster pupils gained independence rapidly by: teacher-prompting, pupil-prompting, experience charts, picture dictionaries, read-a-long taped stories and parent help. Parents and older children contributed assistance by encouraging reading, word prompting, listening to stories read by the child and checking comprehension of material read.

By the end of January the time allotments had been redistributed to continue the pattern set by Project 2673. Table IV shows the change in the organization of time.

TABLE IV

Distribution of Activities by Time at the End of January

Organizational Activities	Distribution of Time by Percentage of 3 Hours		
	Top Half	Third Quarter	Fourth Quarter
Individual	40	30	20
Pupil-Team	50	50	50
Teacher-Directed	10	20	30

Table IV shows the change of emphasis from dependence on teacher-led instruction to pupil-team learning and individual independence. During the pupil-team and individual activities the teacher directed her time to individual conferences and assisted small groups of pupils with special needs. The phonics program was still the major teacher-led activity for the upper three quarters of the class. Also, new skills were teacher presented to small groups and occasionally to the whole class, depending on the needs.

Pupils at all levels were able to read independently in story books. Pupil-teams developed almost complete independence except when new types of activities were initiated.The pupil-teams became more effective learning units. Equal ability teams practiced the various word and comprehension skills and shared stories. Teams of unequal ability shared stories and received skills help by the better reader. For play reading, writing activities and story reading the pupils often selected team-mates. This was successful as evidenced by the pupil activities during free-time: early arrivals to school, noon hour, and after school activities. Pupils were able to find story and play parts for their less able friends and were often seen to coach someone to read his part well.

Children were reading many books independently at home and at school. Parents expressed much interest in the program. They commented on how well and independently their child read and enjoyed reading. It pleased parents that the children wanted to share books with them.

Independence in writing grew rapidly during this period. Individual story and play writing to be shared in teams was popular among pupils of the top half of the classes.

Spelling ability developed rapidly in response to the need to write. The more able pupils often helped the less able so that the teacher's time was seldom used for spelling instruction. Pupils learned to help themselves by finding words in story books, on charts, in dictionaries and in their personal word-books.

The period - November, December and January seemed to be the period of most rapid growth in individual reading independence. Pupils were able to apply with ease the early phonetic skills and all but the lowest 25 percent could read with almost complete independence. They developed the ability to select books which they could read and enjoy. Also, they were able to follow the daily schedule of activities - completing a pupil-team or individual task and moving on to the next without direction from the teacher. Pupil helpers were consulted if problems arose, so that it was not necessary to interrupt a teacher-conference or wait for help.

By the end of the school year the following time distribution was common in the Individualized classes.

TABLE V

Distribution of Activities by Time in May

Organizational Activities	Distribution of Time by Percentage of 3 Hours		
	Top Half	Third Quarter	Fourth Quarter
Individual	75	55	45
Pupil-Teams	23	35	35
Teacher-Directed	2 - 3	10	20

By the end of the school year the top half of the class were working independently in pupil teams or individually about 97 percent of the time each day. The lower pupils needed teacher conferences more often and teacher help with the transfer skills and comprehension. By the end of the year this group was still receiving teacher instruction in the Speech-To-Print phonics. They also needed help with writing skills.

Less teacher time was needed by pupils as the program progressed. However, all pupils needed some of the teacher's time each day to evaluate progress and needs as well as provide instruction in new skills. At all times during the year and for all pupils the teacher was vital in providing motivation and security in learning.

Second Grades:

In September the time distribution for second grade Individualized reading classes approximated the January schedule for first grades. Teacher-directed activities were necessary for 20 to 40 percent of the reading time. Since 146 of the 234 pupils were new to the program, it was essential that these pupils develop the skills and orientation for the new method.

TABLE VI

Distribution of Activities by Time in September

Organizational Activities	Distribution of Time by Percentage of 2 Hours		
	Top Half	Third Quarter	Fourth Quarter
Individual	40	30	20
Pupil-Team	40	40	40
Teacher-Directed	20	30	40

Many of the new pupils were unaccustomed to the independence and responsibility inherent in the program. Teachers spent time orienting the new pupils, with the assistance of those pupils who were with the program for the second year. The second year pupils were very helpful in the orientation of both the teacher who was new to the method, and the new pupils.

After approximately two months the classes were adjusted to the new method and the distribution time changed to correspond closely to the May organization for first grades. Pupils learned to work independently and in teams at a high level of effectiveness. Teacher-directed activities were essential for 5 to 25 percent of the time. She constantly assisted pupils in the evaluation of their performance and progress and continued to direct the learning of new vocabulary and comprehension skills. Pupils also needed skills for locating and organizing materials since about half the time was spent on the reading of content materials. All reading levels in these classes demonstrated interest in selecting content materials for at least 50 percent of their reading. The pupil-team specialties/1 became a popular and effective class procedure. The activities provided opportunities for varied reading levels and interests and special pupil talents. Since interest was likely to extend beyond the reading ability, the teacher was needed to direct the learning of new skills and provide materials.

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1. Donald D. Durrell and Leonard J. Savignano, "Classroom Enrichment Through Pupil Specialities", Journal of Education, Feb. 1956.

Daily Schedule of Activities:

The daily program varied between classes and from week-to-week within each class for both first and second grades. The tasks for the morning or afternoon session or for the day were discussed and recorded on the chalkboard to guide pupils and prevent wasting time.

Sample: First Grade

1. Do your phonics work sheet with a partner.
2. Read to yourself.
3. Do the comprehension check by yourself.
4. Read with a partner.
5. Find your skills sheet in the files. Work with your partner.
6. Write a funny story.
7. Read your story phrases to a partner.
8. Read your list of hard words to a partner.
9. You are ready for a conference. Put your name on the board.

In April and May pupils who had read certain books and had been checked in a teacher conference became checkers for these books. Then pupils could read a new book and the teacher could check two or three pupils on the same book. This procedure prevented pupils waiting for the teacher-conferences and made it possible for more books to be read. All pupils were checked by the teacher on each book read.

Sample: Second Grade

1. Check your work folder. Get the worksheets from the file.

and work with a partner. (Phonetic analysis, structural analysis, word meaning, comprehension, etc. as recommended by the teacher).

2. Read your story book. (Individually or shared with a partner after the individual silent reading).
3. Work with a partner on your spelling.
4. Take the phonetic test from the tape recorder.
5. Check your book with a partner, if you are ready. Put your name on the conference list if you are ready for a teacher conference.
6. Choices -

   Discuss your book with one or two children who have read the book.

   Read a play with partners.

   Read poems with the tape recorder.

   Write a story or play.

   Make a book jacket for your book.
7. Make a report on your book.
8. Continue on your specialty reading and report.
9. Use your dictionary to help you write sentences using two or three meanings for these words.

The same procedures for conferences were followed, as with the first grades. More pupil-checkers were needed and more small group teacher-conferences were conducted to prevent pupils from waiting. All pupils were checked by the teacher on each book read. Skills were checked periodically and practice provided as needed.

Self-selection and Reading Interest:

First Grade:

Pupils were unable to choose reading materials independently during the first half of grade one because of their limited vocabulary skills. Teachers selected 3 or 4 books at each pupil's reading level and within his area of interests. The pupil selected from these books during the teacher-pupil conference, the book he would like to read. Pupils needed teacher direction in the selection of books until they could read easily at high first grade level.

During the latter part of the year, pupils could select independently if the range of reading level did not exceed the pupil's reading level: The wider choice of subject matter motivated more interest in reading. Pupils also learned to consult books on their level for desired subject matter information.

Second Grade:

The top half of the class became independent in selecting library books and content materials. They were able to determine independently if the book was above their reading level. They could locate information from source materials with little help from the teacher. These pupils were able to read at high third grade level and above.

The less able readers needed help in the selection of story books and content materials throughout the year.

Supervision and Teacher Education Activities:

Teachers new to the program. who would be teaching by the Individualized method enrolled in a three-week workshop at Johnson State College. Nine new first grade teachers and eleven second grade teachers participated in the workshop for planning instructional techniques and constructing teaching and practice materials. During the three weeks most of the teachers of the original study participated on a daily basis to share their materials and techniques and evaluate their year with the Individualized Reading program. These teachers demonstrated materials and techniques, answered questions and described organizational patterns. They pointed out specific strengths and problems which they had experienced during their first year with the method. The enthusiasm and practical answers as well as their candid evaluations were of invaluable help to those new to the method.

Two weeks in June were devoted to orientation to the method and evaluating materials. Late in August the workshop was resumed after the teachers had gathered their books and practice materials. This last week was spent in sharing ideas and materials and evaluating techniques and materials. Systems for organization of materials and time schedules were developed.

Teachers lived on campus as guests of the federal grant, which provided uninterrupted time for working and optimum opportunities for sharing materials and ideas as well as cooperative solving of problems. Teachers soon learned the advantages of the team effort and were more secure as problems were worked out together. As the workshop drew to its close plans were made for sharing ideas and materials by mail. Also dates were set for getting together during the school year for days of sharing and evaluating.

Workshop Daily Schedule:

The workshop began at 9:00 a.m. each day and continued until 9:00 p.m.

The time from 9:00 a.m. - 12:00 noon was spent on lectures and demonstrations of philosophy, teaching techniques, organization of materials and evaluative techniques.

Demonstrations were conducted by the project directors and teachers illustrating teaching procedures. Small group and individual work on projects was carried out from 1:00 - 4:00 p.m.

Evaluation and conferences as well as work on the preparation of teaching materials were conducted from 7:00 - 9:00 p.m.

First and Second Workshop Weeks:

The philosophy, techniques, materials and findings of Project 2673 were revised and evaluated by project directors and Project 2673 teachers. Available published research and general teaching guides were surveyed for background for teaching Individualized reading.

Sources for library books and teaching materials were studied and purchase orders prepared. Library books and practice materials other than Basal Reader workbooks were scarce in all classrooms. With the promised aid of Title I federal funds, orders for library books and various available practice materials were prepared. Whenever possible paperbacks were ordered to provide more books with the limited funds available. The inadequate supply of books created a hardship for teachers, particularly in second grades because pupils needed many books of a wide variety in subject areas and reading levels.

Large quantities of varied practice materials were needed for the program. Since these materials were not available as needed, teachers compiled and constructed hundreds of worksheets. Teachers ordered single copies of as wide a variety of practice materials as possible, at levels pre-primer to grade four or five. Second grade teachers were concerned that content materials and learning aids such as dictionaries, maps and encyclopedias be available in their classrooms, since the reading levels of these pupils ranged from primer to grade six.

The skills program of the original study was extended to meet the needs of the second grades.

Systems of evaluating progress and record keeping were studied and some selected as the best for the project needs; flexibility was encouraged within an accepted framework. Teachers from the original project were most generous with ideas and materials. They joined the working teams of new teachers to give the teams the benefit of their year with the method. They passed on to second grade teachers the specific record materials of the pupils whom they had taught in first grade to provide continuity in the pupil's program.

Third Wookshop Week:

During the third week of August the teachers returned to Johnson with their library books and practice exercises. Book checks and phrase cards were evaluated, shared and more prepared. Completed worksheets by the hundreds were evaluated, shared and more prepared. These teachers had prepared sufficient materials to fill several standard file drawers. As a result of sharing ideas and materials, teachers went home with 5 to 10 times as much as though each had worked alone; and they volunteered that the quality of materials was better. Teachers estimated that their files contained more than 1500 different exercises for practicing the various skills at levels from readiness through grade four or five. The exercises were organized by keys for levels and mounted on tag board with the answer key attached. During the year, as in the previous year, more exercises were developed by teachers and directors and samples were mailed to all participating teachers.

Taped lessons were developed for phonics practice. Stories at the beginning reading level were taught by tapes. Tapes were used for read-along activities. Plays and poems were recorded for fun listening and read-along activities. Tapes were designed for teaching the following of directions, developing new vocabulary and comprehension. Science demonstrations were directed by taped directions.

Bookkeeping ledgers were converted into record books and progress in each skill was recorded monthly. Daily records of teacher-pupil contacts were outlined and details kept in a diary-type notebook.

The teacher's function in the program was evaluated and guide lines for teacher-pupil conferences set up.

The original teachers were especially helpful in evaluating functional classroom organization and time schedules. There was agreement that classroom organization became natural as the pupils grew in ability and independence.

A variety of pupil-team organizations and tasks were demonstrated with appropriate materials.

The Speech-To-Print-Phonics program the phonetic program on which this Individualized method was based was demonstrated along with a variety of supplementary practice activities.

During the school year 3 all-day evaluation sessions were conducted with the teachers, some supervisors and administrators and the project director. Fifteen junior and senior students were trained to assist with the administration and scoring of the initial and final tests.

The Individualized Reading classes were visited by the director, research associate or local supervisors nearly every week to assist with materials and procedures. Local centers were initiated for encouraging teachers to share ideas and materials and solve problems. They would serve to aid other teachers who were interested to attempt the program. The director met with teachers at the local centers 3 or 4 times.

The Basal Reader teachers met with the supervisors and project director to become familiar with the project and discuss procedures and materials to supplement the basal system.

The Basal Reader teachers were visited less often by the project director and associate. The local supervisors conducted much of the supervision in these classes since the method and materials were available and familiar to these experienced teachers.

Population and Sample:

Teacher Selection:

Superintendents and teachers who were involved in the original research study, Project 2673, were informed of the request for the new study and invited to participate. Eight of the original teachers were interested to continue with the Individualized method with a new class of first grade pupils. Two of the original teachers were lost to the new study because they moved to other types of positions. One retired from teaching and the fourth did not receive administrative support to continue.

Twelve new first grade teachers requested an opportunity to join the Individualized reading teachers in the project. Nine were selected by superintendents in the areas where the original project had been carried out. These classes were provided with a limited number of library books and other instructional materials. Three of the interested teachers were advised by the director not to attempt the program since there would be no money available for library books specifically for their classrooms.

Superintendents were interested to continue the Individualized method in the second grade for the pupils who had been taught by the method in the first grade. In December they requested that the same program be carried on with these pupils at second grade level. Teachers who were interested in the program were selected to teach these second grade classes. Pupils and parents requested that the second grade teacher teach like the first grade teacher had. Several children stated that they didn't want to go to second grade because they liked first grade. They felt that second graders didn't have as many books and participate in as many interesting activities as they had in first grade. All teachers had taught in their present second grade positions for at least two years by the Basal Reader program.

Ten first grade teachers were selected from the same local areas as the Individualized classes, to teach by the Scott Foresman Basal Reader system. These teachers were rated as comparable to the Individualized reading teachers in educational background and teaching ability.

Nine Basal Reader teachers of second grade classes were selected in the same local areas as the Individualized classes.

Pupil Selection and Class Assignments:

All pupils in the classrooms participating in the study were included in the experiment. Nine were first grade classes in which the Individualized reading program had been conducted the previous year. Eight were new first grade classes in the same areas as the original groups. Nine first grade Basal Reader classes were selected in the same area as Individualized reading classes. These classes were not necessarily taught by the same teachers as the original Basal Reader group. Several of the original Basal Reader teachers became Individualized reading teachers in the new study and others did not wish to be compared with the experimental program. The interest of teachers, administrators, parents and children in the Individualized reading program spread in these small schools so that control classes were not easy to commit.

Eleven of the original classes of first graders were continued in the Individualized reading program at second grade level. The study was planned to follow these pupils a second year to determine the continued effectiveness of the Individualized reading program as it was compared to the Basal Reader program, at the end of grade two. One hundred forty six of the total 234 second grade pupils were new in these classes as a result of administrative regrouping and family moving. By these same processes some pupils from the first grade original Individualized classes were lost to the research study.

All pupils enrolled in the first and second grade classes of the Individualized and Basal Reader treatments were included in the study. All pupils in the second grade Individualized reading classes were instructed by the Individualized techniques and materials. The final test results of the second grades, including the pupils new to the program, were compared to the Basal reader pupils. Also, only the Individualized pupils from the 1964-65 study were compared to the Basal Reader Pupils.

Nine Basal Reader second grade classes were selected in the same local areas as the second grade Individualized reading classes. Three of these classes were the same pupils who had participated in the control population of the first grade study of Project 2673. The loss of the original Basal Reader classes was due to the decision not to provide materials to continue the Individualized program to second grade in three towns. Since it seemed advisable to locate control classes in the same towns as the Individualized classes to provide the most comparable environmental conditions, Basal Reader classes were not continued.

In four of the lost original Basal Reader classes the pupils were regrouped and some became part of Individualized reading classes or teachers deviated drastically from the Basal Reader prescribed procedures. In fact three teachers adoped much of the Individualized method.

Six new Basal Reader classes were included with the three remaining control classes from the first grade study. It was decided that the new classes would not jeopardize the results of the study, since the Basal Reader program is a standardized, programmed and graded program made stable by research and many years of use in classrooms over the country. It is the standard reading method used exclusively by the majority of teachers. (Almost all Vermont classes are taught by the Basal Reader method.)

Pupils were assigned in all first grade classes according to a random placement technique, by local school administrators.

It was hoped that the second grade classes would be comprise of pupils from the original first grade study. The description of these second grade classes has been included earlier in this report.

Class enrollment varied from class to class.

TABLE VII

Classroom Enrollment for Individualized Reading and Basal Reader Classes

	First Grades			Second Grades		
Treatment	No. Class	Av. Class Size	Range	No. Class	Av. Class Size	Range
Individualized	17	25	9-28	11	22	15-28
Basal	9	21	9-27	9	18	5-24

The average class size was greater for the Individualized treatment at first and second grade levels. The class averages show that the extremely small classes were the exceptional classes in each treatment. At first grade level, 2 Individualized classes and 1 Basal class had an enrollment in excess of 25 pupils. At second grade level 2 Individualized classes exceeded 25 pupils and no Basal Reader class exceeded 24 pupils. The first and second grade Individualized classes averaged 3 pupils more per class than the Basal Reader classes.

Equating the Groups:

The following pre-instruction tests were administered to the 26 first grade classes September 7 - September 16, 1966.

Murphy-Durrell Diagnostic Reading Readiness

Kuhlman-Anderson Intelligence Test, Scale A

Durrell-Murphy Informal Phonics Test, Sounds in Isolation Section

At second grade level, the 11 Individualized Reading and 9 Basal Reader classes were administered these pre-instruction tests September 7-September 16, 1966.

Kuhlman-Anderson Intelligence Test - Scale B

Metropolitan Achievement Test - Primary Battery II, Form A

Durrell-Murphy Informal Phonics Tests

Letter recognition
Sounds in words
Sounds in Isolation
Phonograms

It was necessary to administer pre-instruction tests to all second grade classes since several Basal Reader classes were new to the study. Pupils were new to the program, due to administrative regrouping of pupils at the end of grade one. By administering pre-instruction tests it was possible to compare the effectiveness of the Individualized reading and Basal Reader programs at second grade level, even though the population included pupils who were not participants in the original study, Project 2673.

At the mid-point in the instructional program, January 31 -

February 4, 1966, all first grade classes were administered the following tests:

- Durrell-Murphy Phonics Test (Unpublished)
    - Letter Names, upper and lower case letters
    - Phonemes, sounds in words and sounds in isolation
    - Phonograms, in isolation
- Detroit Word Recognition Test

After 140 days of instruction, May 9 - 20, 1966, the following post-instruction tests were administered:

- First Grades: All pupils
    - Group Tests
        - Stanford Achievement Test, Primary I Battery, Form X
            - All six sub-tests
    - Individual Tests
        - Gilmore Oral Reading Test
            - Accuracy, Comprehension, Rate
        - Gates Word Pronunciation Test (Form I, 40 words)
            - A list of phonetically regular and irregular words.
- Second Grades: All pupils
    - Group Tests
        - Stanford Achievement Test, Primary II Battery, Form W
            - All eight sub-tests
    - Individual Tests
        - Gilmore Oral Reading Test
            - Accuracy, Comprehension, Rate

Gates Word Pronunciation Test, (Form I, 40 words)

A list of phonetically regular and irregular words.

First and Second Grades: Sample testing

Every fifth pupil in alphabetical order was selected from each classroom as a ramdon sample for both the Individualized and Basal reading treatments. The following measures were administered.

Fry-Test of Phonetically Regular Words

Individual word pronunciation test

Manning-Writing Sample

First and Second Grades: All pupils

Reading Interest Test

Reading Maturity Test

Number of books read

Tests were administered by the director, research associate and student teams assisted by the classroom teachers. All tests were scored by the research associate and student teams trained for the project.

Results of the study were analyzed by a multivariate analysis of covariance program at the Boston University Computing Center.

DESCRIPTION AND ANALYSIS OF DATA

The results of the pre-measures and post-measures were analyzed to answer the questions set up in the objective of the study on page 5 of this report. The data were cleared of individuals for whom any test results were missing.

The population distribution for the study is shown on the following tables:

TABLE VIII

Population Distribution by Treatments and Sex for First Grade

Treatment	Boys	Girls	Total
Individualized	158	174	332
Basal	82	82	164

The 332 first grade pupils in the Individualized reading program were distributed in 17 Individualized classes and the 9 Basal Reader classes were made up of 164 pupils.

TABLE IX

Population Distribution by Treatment and Sex for Second Grades

Treatment	Boys	Girls	Total
Individualized	113	121	234
Basal	80	79	159

The 234 second grade pupils in the Individualized reading program were distributed in 11 classes. The 159 second grade Basal Reader pupils were distributed in 9 classes.

The first grade data were cleared for 29 variables:7 pre-measures and 22 post-measures. The second grade data were cleared for 17 variables: 5 pre-measures and 12 post-measures.

The Kuhlman-Anderson Intelligence Test was administered to all pupils of first and second grades in the Individualized and Basal Reader classes. The following tables have blocked the pupils into intelligence quotients levels.

TABLE X

Distribution of Kuhlman Anderson Intelligence Quotients in Four Blocks for Individualized and Basal Reader Treatments, Sex and Totals - First Grade Level

Kuhlman Anderson Test		Individualized			Basal Reader			Grand Total
Level	I.Q.	Boys	Girls	Tot.	Boys	Girls	Tot.	
H	104 & above	30	59	89	13	17	30	119
H M	95 - 103	30	37	67	24	17	41	108
L M	86 - 94	45	37	82	21	29	50	132
L	85 or less	53	41	94	24	19	43	137
Totals		158	174	332	82	82	164	496

TABLE XI

Distribution of Kuhlman Anderson Intelligence Quotients in Four Blocks for Individualized and Basal Reader Treatments, Sex and Totals - Second Grade Level

Kuhlman Anderson Test		Individualized			Basal Reader			Grand Total
Level	I.Q.	Boys	Girls	Tot.	Boys	Girls	Tot.	
H	104 & above	50	68	118	25	32	57	175
H M	95 - 103	26	27	53	23	27	50	103
L M	86 - 94	26	17	43	22	15	37	80
L	85 or less	11	9	20	10	5	15	35
Totals		113	121	234	80	79	159	393

Tables X and XI distribute the pupils of grades one and two by intelligence quotients into 4 ability levels, designated H-High, (I.Q. 104 and above). H.M.-High Middle (I.Q. 95-103); L.M.-Low Middle (I.Q. 86-94) and L-Low (I.Q. 85 or less).

The Individualized reading and Basal Reader treatments were statistically compared by means of an analysis of covariance procedure. The probable influence of the differences in intelligence were eliminated by statistical equalizing procedures.

Analysis of Pre-Measures at first grade level:

The results of seven pre-instruction tests were analyzed to compare the two treatments before instruction.

The variables were:

Durrell-Murphy Reading Readiness Test

Phonemes I

Phonemes II

Phonemes I and II Total

Upper Case letters

Lower Case Letters

Upper and Lower Case Letters Total

Sounds in Isolation

The results of the covariance analysis indicated that the Individualized treatment was superior to the Basal Reader treatment on three sub-tests as shown on Table XII.

TABLE XII

Comparison of Adjusted Mean Scores for the Durrell-Murphy-Reading-Readiness Subtests - Individualized Reading and Basal Reader Methods

Pre-measures	Individualized	Basal	F-Ratios
Phonemes I	12.313	11.723	1.988
Phonomes II	14.926	14.442	.802
Phonemes I & II Total	27.239	26.165	1.426
Upper Case Letters	16.574	15.078	5.604*
Lower Case Letters	12.856	11.211	10.005**
Upper & Lower Totals	29.382	26.283	8.012**
Sounds in Isolation	8.851	7.689	3.593

A ratio of 3.86 is necessary for a significant difference at the .05 level. A ratio of 6.70 indicates a difference at the .01 level of significance.

* Significant difference at the .05 level favoring the Individualized treatment. ** A .01 difference favoring the Individualized Treatment.

On the three subtests measuring letter knowledge the Individualized Reading group was significantly superior to the Basal Reader group. The adjusted mean scores for the remaining subtests were slightly higher for the Individualized Reading treatment but the differences were not significant.

The first grade Individualized Reading and Basal Reader pre-measures were analyzed to determine if the difference in chronological age for each treatment resulted in a significant difference in achievement.

Table XIII and XIV show the comparison of the youngest and oldest pupils excluding repeaters, before instruction.

TABLE XIII

Pre-measures - First Grades - Comparison of C.A. Individualized Reading Treatment
Murphy-Durrell: Reading Readiness Test

Chronological Age	N	Phon. I	Phon. II	Phon. Total	Letters Caps	Letters L.C.	Letters Total	Sounds in Isolation
Youngest	91	10.973	13.325	24.298	15.784	11.971	27.746	7.986
Oldest	89	12.825	15.307	28.132	16.647	13.321	29.776	9.441
F-ratio		6.725**	5.194*	6.713**	.680	2.531	1.246	1.930

Youngest 5-8 to 6-0 years

Oldest 6-9 to 7-2 years

*Significant at the .05 level

**Significant at the .01 level

The analysis reported in Table XIII indicates that the oldest first graders in the Individualized treatment had greater ability in the recognition of letters and letter sounds than the youngest when they entered school. The differences were statistically significant on the phoneme sub-test.

Table XIV compares the pre-instruction achievement level of the youngest and oldest Basal Reader pupils on the Murphy-Durrell Reading Readiness Test.

TABLE XIV

Pre-measures - First Grades - Comparison of C.A. - Basal Reader Treatment
Murphy-Durrell: Reading Readiness Test

Chronological Age	N	Phon. I	Phon. II	Phon. Total	Letters Caps	Letters L.C.	Letters Total	Sounds in Isolation
Youngest	47	10.841	12.470	23.312	11.565	8.874	20.440	5.713
Oldest	49	11.641	14.508	26.149	16.538	12.936	29.475	8.641
F-ratio		.745	3.079	2.075	13.081**	14.184**	15.122**	6.092*

Youngest 5-8 to 6-0 years

Oldest 6-9 to 7-1 years

*Significant at the .05 level

**Significant at the .01 level

Table XIV shows the pre-instruction achievement of the oldest pupils to be superior to the youngest at the beginning of first grade. The differences were significant on the recognition of letters and sounds of isolation. This was the reverse of the significant differences for the Individualized treatment.

The Individualized group was analyzed to determine the effect of kindergarten experience on readiness for reading as measured by the Murphy-Durrell Reading Readiness Test.

TABLE XV

Pre-measures - First Grade - Individualized Reading Treatment

Comparison of the Effect of Kindergarten vs. Non-Kindergarten Experiences on the Murphy-Durrell: Reading Readiness Test Results

Pre-school Experience	N	Phon. I	Phon. II	Phon. Total	Letter Caps.	Letters L.C.	Letters Total	Sounds in Isolation
Less than 20 half days	87	11.091	13.266	24.358	16.808	12.014	28.783	8.351
101-200 half days	168	13.791	16.778	30.570	17.891	14.070	31.873	10.925
F-ratio		19.882**	20.169**	22.894**	1.470	7.658 **	3.944*	7.029**

*Significant at the .05 level

**Significant at the .01 level

Table XV indicates that these pupils with pre-school experiences were significantly superior on the measured reading readiness skills, to those pupils who came to school without pre-school experiences. Intelligence was not considered an influence, since that factor had been eliminated by the covariance analysis procedure.

It was impossible to make the same comparisons for the Basal Reader pupils since practically all children in that treatment had received at least 6 weeks of organized pre-school experience.

Analysis of Pre-Measure at Second Grade Level

The Metropolitan Achievement Test was administered to all pupils in the Individualized and Basal Reader classes before instruction began in September. The results of the five pre-instruction sub-tests were analyzed to compare the achievement of the two treatments.

The 5 variables were:

Metropolitan Achievement Tests: Primary II Battery, Form A

Word Knowledge

Word Discrimination

Reading Comprehension

Spelling

Arithmetic Concepts

The covariancé analysis eliminated the possible effect of intelligence as a variable and then compared the adjusted means for the 5 subtests. Table XVI compares the two treatments with all pupils of both treatments included.

TABLE XVI

Pre-measures - Individualized Reading (All Pupils) vs. Basal Reader - Grade 2
Comparison of Pre-instruction Achievement - Metropolitan Achievement Test

		Metropolitan Achievement Tests								
Treatment	N	Word Knowl.		Word Disc.		Read Comp.		Spelling		Arith. Con.
		Raw Sc.	Gr.	Raw Sc.	Gr.	Raw Sc.	Gr.	Raw Sc.	Gr.	Raw Sc.
Individualized	234	17.561	2.4	22.268	2.3	18.445	2.1	11.073	2.1	38.016
Basal	159	14.795	2.2	19.071	2.2	17.168	2.1	7.998	1.9	39.467
F-ratio		13.115**		18.561**		1.243		18.340**		1.322

*Significant at the .05 level

**Significant at the .01 level

The results of Table XVI show that the Individualized Reading group was superior to the Basal Reader group at the .01 level on the Word Knowledge, Word Discrimination and Spelling tests. All pupil-those from the 1964-65 first grade study and pupils new to the program-were included in the Individualized reading treatment.

Also the treatments were compared on the 5 sub-tests of the Metropolitan Achievement Test with only the pupils who had participated in the first grade Individualized reading program, in that treatment. All pupils new to the method were eliminated. Table XVII shows the comparison of the two treatments.

TABLE XVII

Pre-Measures-Individualized Reading (Pupils of 1964-65 Study) vs. Basal Reader-Grade 2
Comparison of Pre-instruction Achievement - Metropolitan Achievement Test

		Metropolitan Achievement Tests								
Treatment	N	Word Know.		Word Disc.		Read. Comp.		Spelling		Arith Con.
		Raw Sc.	Gr.	Raw Sc.	Gr.	Raw Sc.	Gr.	Raw Sc.	Gr.	Raw Sc.
Individualized	186	18.216	2.4	22.741	2.5	19.296	2.2	11.823	2.1	39.487
Basal Reader	159	14.795	2.2	19.071	2.2	17.168	2.1	7.998	1.9	39.161
F-ratio		17.761**		22.431**		2.964		24.401**		.059

*Significant at .05 level

**Significant at .01 level

When the new pupils were eliminated from the Individualized reading group the differences between the two treatments were greater favoring the Individualized reading method. The Basal Reader group remained the same for Tables XVI and XVII. About 30 pupils - a portion of 3 classes - were participants in the 1964 first grade study; one hundred thirty Basal Reader second grade pupils had not been involved in the original research project.

In the analyses reported by Tables XVI and XVII, the pre-instruction achievement of the Individualized reading classes was significantly higher than the Basal Reader classes on the vocabulary and spelling tests. The difference in reading comprehension was not significant and the Basal Reader group was slightly superior on the arithmetic test when all pupils were included in the Individualized group.

The data was analyzed to compare the achievement of boys and girls on the pre-measures - Metropolitan Achievement test. Table XVIII compares the boys and girls including the total enrollment of all second grade classes.

TABLE XVIII

Comparison of Boys and Girls for Each Treatment on the Pre-Measures - Metropolitan Achievement Tests - Second Grades

Measures	Individualized Reading			Basal Reading		
Metropolitan Achievement Test	Boys	Girls	F-Ratio	Boys	Girls	F-Ratio
Word Knowledge	16.592	18.554	4.490*	14.816	14.773	.001
Word Discrim.	21.352	23.207	4.238*	19.229	18.850	.103
Read Comp.	15.803	21.043	13.942**	16.865	17.462	.123
Spelling	9.918	12.241	7.088*	8.117	7.760	.101
Arith. Concepts	37.849	38.297	.080	40.020	38.518	.615

*Significant at .05 level

**Significant at .01 level

Table XVIII reports that the girls of the Individualized Reading treatment were significantly superior to the boys on the reading and spelling subtests of the Metropolitan Achievement tests. The boys of the Basal Reader treatment were slightly superior to the girls on four subtests but the differences were not significant.

Table XIX compares the pre-instruction achievement of the boys and girls who were taught by the Individualized Reading method in the 1965 first grade study. The boys and girls of the second grade Basal Reader classes are compared also on the Metropolitan Achievement test.

TABLE XIX

Comparison of Boys and Girls for Each Treatment on the Pre-measures - Metropolitan Achievement Tests (1965 Individualized Reading Pupils)
Second Grades

Measures	Individualized Reading+			Basal Reading		
Metropolitan Achievement Test	Boys	Girls	F-ratio	Boys	Girls	F-ratio
Word Knowledge	16.845	19.378	6.013*	14.816	14.773	.001
Word Discrimination	21.706	23.611	3.548	19.229	18.850	.103
Reading Comprehension	16.607	21.597	9.238**	16.865	17.462	.123
Spelling	10.486	12.956	6.280*	8.117	7.760	.101
Arith. Concepts	39.595	39.335	.020	40.020	38.518	.615

*Significant at the .05 level

**Significant at the .01 level

+Pupils from the 1965 Individualized Reading classes

The Individualized Reading girls achieved significantly higher than the boys on the reading and spelling subtests. The sex differences were not as great as when the total population of the Individualized treatment was included in the analysis. The differences between Basal Reader boys and girls were not significant on any of the subtests.

Summary of the Analysis of Pre-Measures

After the elimination of intelligence as a variable, the co-variance analysis showed that the pupils of the first grade Individualized Reading classes were significantly superior to the Basal Reader classes in the Letters tests of the Murphy-Durrell Reading Readiness test. The differences were not significant on the 4 Letter Sounds subtests.

The Individualized Reading pupils who entered school at 6-9 to 7-2 years achieved higher scores on the readiness subtests than the youngest pupils: 5-8 to 6-0 years of age. The differences were significant on the Phoneme tests.

The oldest first grade Basal Reader pupils achieved significantly higher than the youngest on the Letter tests and Sounds in Isolation. The differences were not significant on the Phonemes tests.

The Individualized Reading first grade pupils with kindergarten experience achieved significantly higher on the readiness test than pupils who came to school without kindergarten experience.

Most of the Basal Reader first grade pupils had kindergarten experience before coming to first grade, thus a comparison could not be made for that treatment.

The results of the two major subtests on the first grade Murphy-Durrell- Reading Readiness Test were compared to determine the achievement differences of high and low intelligence levels. The pupils with intelligence quotients of 104 and above on both treatments were compared on the Total Letters and Total Phonemes subtests. Then the pupils with intelligence quotients of 85 or less were compared.

TABLE XX

Comparison of Individualized and Basal Reader Pupils with I.Q. of 104 or Above on Murphy-Durrell-Reading Readiness Test ----- Total Letter Test

Treatment	N	Mean Raw Score	S.D.	S.E.m	Dif.m	S.E.m	C. Ratio
Individualized	94	39.15	11.70	1.22	7.18	1.82	3.94
Basal Reader	38	31.97	12.95	2.10			

Table XX shows that the high ability Individualized Reading group was significantly superior to the high ability Basal Reader group on the pre-instruction letter recognition test, at the .01 level.

TABLE XXI

Comparison of Individualized and Basal Reader Pupils with I.Q. 85 or Less on the Murphy-Durrell Reading Readiness Test --------- Total Letter Test

Treatment	N	Mean Raw Score	S.D.	S.E.m	Dif.m	S.E.d	C. Ratio
Individualized	127	16.30	11.00	.98	2.65	1.65	1.60
Basal Reader	70	18.95	13.75	1.74			

Table XXI shows that the Basal Reader low ability group achieved at a higher level than the Individualized group on the Letter Recognition readiness test. The difference was not significant.

TABLE XXII

Comparison of Individualized and Basal Reader Pupils with I.Q. 104 or above on the Murphy-Durrell Reading Readiness Test --------- Total Phoneme Test

Treatment	N	Mean Raw Score	S.D.	S.E.m	Dif.m	S.E.m	C. Ratio
Individualized	94	33.25	11.60	1.20	1.25	1.65	.76
Basal Reader	38	32.00	9.35	1.52			

Table XXII shows no significant difference between the high ability Individualized pupils and Basal Reader pupils on the Phoneme Test.

TABLE XXIII

Comparison of Individualized and Basal Reader Pupils with I.Q. 85 or less on the Murphy-Durrell Reading Readiness Test-Total Phoneme Test

Treatment	N	Mean Raw Score	S.D.	S.E.m	Dif.m	S.E.m	C. Ratio
Individualized	127	18.40	10.75	.98	.67	1.55	.43
Basal Reader	70	17.73	11.90	1.41			

Table XXIII shows no significant difference between the low ability Individualized and Basal Reader pupils on the Phoneme test.

The analyses reported in Tables XX --- XXIII agree with Table XII on page 52 of this report. Table XII reports the analysis of the reading readiness test after the intelligence factor had been eliminated.

After the equalization for the differences in intelligence, the results of the second grade pre-measures were analyzed. When the pupils from the first grade study, Project 2673, and all other pupils in the classrooms were included, the Individualized treatment was significantly superior to the Basal Reader treatment on the Word Knowledge, Word Discrimination and Spelling subtests of the Metropolitan Achievement Test. The differences were greater when only the pupils of Project 2673 were included in the pre-instruction analysis.

Analysis of Post-Measures: First Grade

The results of the final tests were analyzed by the same covariance program as the pre-instruction measures. For the final data processing, the analysis of variance included 17 post-measure variables analyzed by: treatment, sex and chronological age. The results of the achievement tests were highly significant favoring the Individualized approach. These findings closely agreed with the results of the original first grade study - Project 2673.

On the post-measures analysis a few variables yielded significant sex differences when analyzed within treatments. The Individualized reading girls were superior to the boys on all variables except the Stanford Arithmethic Test and the January Murphy-Durrell-Capital Letter Test. The differences on these 2 subtests were not significant. There were only 3 subtests which favored the girls significantly. The pattern was the same for the Basal Reader boys and girls, except that the girls achieved significantly higher than the boys on the subtests.

The differences in achievement of the chronologically youngest and oldest pupils within treatments varied with the subtests for both the Individualized reading and Basal Reader groups. The differences were not significant within either treatment.

Table XXIV shows the comparison of adjusted raw score means of the Individualized and Basal treatments on the 17 post-measures. Grade levels are included to aid the interpretation of standardized test results. For tests without available grade norms, possible raw scores have been reported.

TABLE XXIV

Comparison of Individualized and Basal Treatments on 17 Post-Instruction Measures by Adjusted Raw Score Means, Grade Equivalents or Possible Scores, and F-ratios Determined by Analysis of Covariance - First Grade

Post-Measurers	Individualized		Basal		F-Ratios
	Mean**	Grade***	Mean**	Grade***	
1. J. Detroit Word	16.752	1.9	12.098	1.6	45.311++
2. Stanford Word	24.066	1.9	18.180	1.7	86.992++
3. Stanford Para. Mean.	23.688	1.9	17.032	1.7	76.709++
4. Stanford Vocabulary	22.397	2.1	19.250	1.8	31.789++
5. Stanford Spelling	13.454	2.1	8.769	1.7	86.037++
6. Stanford Word Study	40.108	2.1	34.019	1.8	47.678++
7. Stanford Arithmetic	39.221	1.9	32.777	1.7	36.948++
8. Gilmore Accuracy	25.300	3.0	17.965	2.2	59.810++
9. Gilmore Rate	58.898	2.5	53.450	2.5	7.077++
10. Gilmore Comp.	20.214	2.8	17.072	2.2	25.042++
11. Gates Word Pron.	16.306	40*	10.196	40*	89.131++
12. J. Durrell-Murphy CAPS	24.839	26*	24.277	26*	3.979+
13. J. Durrell-Murphy L Case	24.260	26*	22.472	26*	29.230++
14. J. Durrell-Murphy Isol.Sds.	34.079	42*	25.199	42*	146.612++
15. J. Durrell-Murphy Init.Sds.	33.185	42*	24.137	42*	129.950++
16. J. Durrell-Murphy Final.Sds.	11.038	15*	6.988	15*	151.582++
17. J. Durrell-Murphy Phono.	43.453	64*	25.838	64*	216.937++

J. Tests administered in January

* Total possible raw score

** Adjusted raw score mean

*** Grade equivalent

These F-ratios have 1 and 494 degrees of freedom. A ratio of 2.50 is necessary for significance.

+ Significant at the .05 level

++ Significant at the .01 level

The post-measures for the first grades of this study were:

Group Tests:

1. Detroit Word Recognition Test
2. Stanford Word Reading

   Pupil's task is to select one word from four to identify a picture.
3. Stanford Paragraph Meaning

   Pupils select one of four words which correctly completes the meaning of the paragraph.
4. Stanford Vocabulary

   Pupils listen to the key part of a sentence and choose one of three words to correctly complete the sentence.
5. Stanford Spelling

   Pupils write words from dictation
6. Stanford Word Study

   Pupils listen to three words and identify the word which contains the word element specified in a dictated key word.
7. Stanford Arithmetic

   Tests of measures, problems and number concepts are included.

Individual Tests

8. Gilmore Oral Reading - Accuracy
9. Gilmore Oral Reading - Rate

10. Gates Word Pronunciation

Pupil pronounces as many words as possible from a list of 40 increasingly more difficult words.

11. Gilmore Comprehension

Comprehension is checked by oral questions following oral reading of individual paragraphs.

Group Tests

12. Durrell-Murphy Capital Letters

Pupils select dictated letters from rows of letters.

13. Durrell-Murphy Lower Case Letters

14. Durrell-Murphy Sounds in Isolation

Pupils select the letter as the teacher says the sound of the letter.

15. Durrell-Murphy Initial Sounds

Pupils select the word which begins with the same sound as the dictated word.

16. Durrell-Murphy Final Sounds

Pupils find the word which ends like the dictated word.

17. Durrell-Murphy Phonograms

Pupils identify the phonogram which the teacher pronounces in isolation.

Table XXIV reports the differences between the achievement of the Individualized and Basal approaches on each of the 17 post-measures. as signified by the F-ratios and grade equivalents.

The Individualized Reading treatment achieved highly significant results to the Basal Reader treatment. The difference was significant favoring the Individualized treatment on all measures at the .01 level and much higher, except the January Recognition of Capital Letters. Both groups achieved close to the test limit. The difference between the Individualized and Basal groups on the Gilmore Rate Test favored the Individualized treatment at the .01 level, but much less than on the other 15 measures. This less degree of superiority may have been influenced by the emphasis on oral reading expression and the larger amount of silent reading practice experienced by the Individualized Reading Classes. These results agree quite consistently with the final results for Project 2673.

The differences between the two treatments might have been greater if the upper limits had been higher on the Stanford Achievement Test, the Detroit Word Test and the Durrell-Murphy Phonics Test. Several more of the Individualized pupils than the Basal pupils achieved perfect scores on these tests.

It may be observed that most of the very high F-ratios appear for those post-measurers most dependent on phonetic analysis skills. These results may be attributed to the emphasis placed on the comprehensive phonetic program in the Individualized first grade classes.

Grade equivalents are included in Table XXIV to provide practical interpretation to the achievement levels and differences between the treatments. On those tests for which norms were not available the possible raw scores were included as a basis for comparison of achievement.

It may be observed that the Individualized group achieved .8 of a grade higher than the Basal group on the *Gilmore Oral Reading Accuracy Test* and .6 of a grade higher on the *Gilmore-Comprehension Test*. The differences on the other standardized tests were generally 3 or 4 months, favoring the Individualized treatment. A difference of more than half a grade can be noted between the *Stanford Word Test* and the *Gilmore Oral Reading Accuracy Test* for both treatments. The same difference is found between the *Stanford Paragraph Meaning* and *Gilmore Comprehension* tests for both treatments. This difference might likely indicate a higher level of difficulty for the *Stanford Achievement Tests*.

Post-measures 12-17, *Durrell-Murphy Phonics Test*, (January testing) have no norms available. However, observation of the differences between the raw score means and the possible score for each subtest will indicate the average achievement for the treatments on each test. The large F ratios for the tests of sounds shows that the Individualized treatment rated very significantly higher than the Basal treatment on these phonetic tests.

The first grade post-measure results were analyzed to determine if there were significant differences in achievement between the high and low ability groups when the Individualized and Basal Reader treatments were compared. The results of the *Stanford Achievement* 6 subtests are compared on Tables XXV ~~to~~ XXVI.

TABLE XXV

Comparison of Individualized and Basal Reader Pupils - First Grade with I.Q. 104 or above on Stanford Achievement - Word Meaning Test.

Treatment	N	Mean	S.D.	S.E.m	Dif.m	S.E.d	C Ratio
Individualized	89	28.10	3.57	.380	7.39	.42	17.62*
Basal Reader	34	20.71	5.88	.178			

* Significant at .01 level favoring the Individualized treatment.

TABLE XXVI

Comparison of Individualized and Basal Reader Pupils - First Grade with I.Q. 85 or less on Stanford Achievement Word Meaning Test.

Treatment	N	Mean	S.D.	S.E.m	Dif.m	S.E.d	C Ratio
Individualized	92	18.70	4.89	.513	3.65	.92	4.14*
Basal Reader	51	15.05	5.42	.767			

* Significant at .01 level favoring the Individualized treatment.

TABLE XXVII

Comparison of Individualized and Basal Reader Pupils - First Grade with I.Q. 104 or above on Stanford Achievement - Paragraph Meaning Test

Treatment	N	Mean	S.D.	S.E.m	Dif.m	S.E.d	C Ratio
Individualized	89	28.95	5.75	.62	8.71	1.467	5.79*
Basal Reader	34	20.24	7.76	1.33			

*Significant at .01 level favoring the Individualized treatment.

TABLE XXVIII

Comparison of Individualized and Basal Reader Pupils - First Grade with I.Q. 85 or less on Stanford Achievement - Paragraph Meaning Test.

Treatment	N	Mean	S.D.	S.E.m	Dif.m	S.E.d	C Ratio
Individualized	92	16.50	6.52	.68	4.9	1.06	4.62*
Basal Reader	51	11.60	5.83	.82			

*Significant at .01 level favoring the Individualized treatment.

TABLE XXIX

Comparison of Individualized and Basal Reader Pupils - First Grade with I.Q. 104 or above on Stanford Achievement - Vocabulary Test

Treatment	N	Mean	S.D.	S.E.m	Dif.m	S.E.d	C Ratio
Individualized	89	25.60	3.97	.16	3.4	1.12	3.12*
Basal Reader	34	23.10	6.59	1.15			

*Significant at .01 level favoring Individualized treatment.

TABLE XXX

Comparison of Individualized and Basal Reader Pupils - First Grade with I.Q. 85 or less on Stanford Achievement - Vocabulary Test

Treatment	N	Mean	S.D.	S.E.m	Dif.m	S.E.d	C Ratio
Individualized	92	16.53	4.24	.47	.73	1.03	.71
Basal Reader	51	17.26	4.12	.59			

No significant difference

TABLE XXXI

Comparison of Individualized and Basal Reader Pupils - First Grade with I.Q. 104 or above on Stanford Achievement - Spelling Test

Treatment	N	Mean	S.D.	S.E.m	Dif.m	S.E.d	C Ratio
Individualized	89	16.85	3.07	.33	6.0	.89	7.15*
Basal Reader	34	10.85	4.43	.77			

* Significant at .01 level favoring Individualized treatment

TABLE XXXII

Comparison of Individualized and Basal Reader Pupils - First Grade with I.Q. 85 or less on Stanford Achievement - Spelling Test

Treatment	N	Mean	S.D.	S.E.m	Dif. m	S.E.d	C Ratio
Individualized	92	8.0	2.99	.31	2.0	.77	2.61*
Basal Reader	51	6.0	4.96	.70			

* Significant at .01 level favoring Individualized treatment

TABLE XXXIII

Comparison of Individualized and Basal Reader Pupils - First Grade with I.Q. 104 or above on Stanford Achievement - Study Skills Test

Treatment	N	Mean	S.D.	S.E.m	Dif.m	S.E.d	C Ratio
Individualized	89	46.46	6.07	.65	6.14	1.47	4.22*
Basal Reader	34	40.32	7.57	1.32			

*Significant at .01 level favoring Individualized Treatment

TABLE XXXIV

Comparison of Individualized and Basal Reader Pupils - First Grade with I.Q. 85 or less on Stanford Achievement - Study Skills Test

Treatment	N	Mean	S.D.	S.E.m	Dif.m	S.E.d	C Ratio
Individualized	92	33.40	7.06	.54	5.75	1.35	4.30*
Basal Reader	51	27.65	7.97	1.13			

*Significant at .01 level favoring Individualized treatment

TABLE XXXV

Comparison of Individualized and Basal Reader Pupils - First Grade with I.Q. 104 or above on Stanford Achievement - Arithmetic Test

Treatment	N	Mean	S.D.	S.E.m	Dif.m	S.E.d	C Ratio
Individualized	89	48.57	8.22	.88	7.69	2.04	3.78*
Basal Reader	34	40.88	10.59	1.84			

* Significant at .01 level favoring Individualized treatment

TABLE XXXVI

Comparison of Individualized and Basal Reader Pupils - First Grade with I.Q. 85 or less on Stanford Achievement - Arithmetic Test

Treatment	N	Mean	S.D.	S.E.m	Dif.m	S.E.d	C Ratio
Individualized	92	28.60	10.94	1.15	2.45	1.74	1.43
Basal Reader	51	26.15	10.65	1.51			

No significant difference

Tables XXV - XXXVI compare the high I.Q. (104 and above) and the low (85 or less) ability groups of the Individualized reading and Basal Reader approaches on each subtest of the Stanford Achievement Test. The Individualized reading high and low ability level pupils achieved significantly higher scores than the Basal Reader pupils on the following subtests: Word Meaning, Paragraph Meaning, Spelling and Study Skills.

The Individualized high ability pupils achieved significantly higher than the Basal Reader high ability pupils on the Vocabulary and Arithmetic subtests. The Basal Reader low ability group was slightly higher, not a significant difference, than the Individualized group on the Vocabulary test. The Individualized pupils achieved higher, not a significant amount, than the Basal Reader pupils on the Arithmetic test.

The data were analyzed to compare the achievement of boys and girls on the post-measures with the 2 treatments.

Table XXXVII reports a comparison of the achievement of boys and girls within each treatment, on the post-instruction measures.

TABLE XXXVII

Post-Measurers - Individualized vs. Basal Reader - First Grade
Comparison of the Achievement of Boys and Girls

	Individualized Reading			Basal Reader		
Measures	Boys	Girls	F-ratio	Boys	Girls	F-ratio
Gilmore Accuracy	24.668	26.726	3.088	15.366	19.157	9.403**
Gilmore Rate	57.572	61.356	2.602	47.487	57.488	9.154**
Gates-Word Pron.	16.448	16.620	.043	8.644	10.842	9.263**
Gilmore Comp.	19.669	21.199	4.176*	15.529	17.873	6.327*
Detroit Word Recog.	15.884	18.349	9.726**	10.437	12.526	3.730
Stanford-Word Read.	24.130	24.400	.157	17.649	18.533	.778
" Para. Meaning	22.734	25.298	8.943**	14.598	18.389	9.387
" Vocabulary	22.237	22.984	1.638	18.665	19.042	.125
" Spelling	13.178	14.107	2.685	7.597	9.268	3.863*
" Word Study Skills	39.757	41.153	2.191	32.180	34.587	2.178
" Arithmetic	40.150	39.125	.790	32.356	31.411	.238
Durrell-Murphy Readiness						
D.M. Letter-Caps	24.944	24.852	.096	23.835	24.469	1.390
D.M. Letters-L.C.	24.331	24.349	.003	21.861	22.760	1.734
D.M. Isol. Sounds	34.112	34.604	.366	23.632	25.684	2.555
D.M. Initial Sounds	33.341	33.642	.119	22.823	24.237	.930
D.M. Final Sounds	11.037	11.300	.457	6.109	7.365	6.063*
D.M. Phonograms	42.774	45.020	3.105	23.246	26.851	2.788
San Diego Attitude	17.109	17.987	2.674	16.330	16.730	.347
Books Read	13.240	13.621	.048	3.319	4.632	3.472
Books partially read	1.177	1.304	.165	1.749	1.738	.000
Interest Eagerness	3.188	3.836	25.807**	2.637	3.143	4.976*
Maturity of Choice	3.089	3.419	5.826*	2.473	2.746	2.207

*Significant at the .05 level

**Significant at the .01 level

Table XXXVII shows the achievement of the girls of both treatments above the boys.

The difference between boys and girls is significant on a few of the measures. The Individualized Reading girls were significantly superior to the boys of that treatment on the following measures: Gilmore Comprehension Test, Detroit Word Recognition Test, Stanford Paragraph Meaning Test and the Reading Interest Inventory.

The Basal Reader girls were significantly superior to the boys of that group on the following measures: Gilmore-Accuracy, Comprehension and Rate Tests; Gates Word Pronunciation Test, Stanford Achievement - Paragraph Meaning and Spelling Tests; Durrell-Murphy-Phonetic Test - Final Sounds; and the Reading Interest Inventory. The boys of both treatments achieved slightly higher scores on the Stanford Arithmetic Test than the girls.

Table XXXVIII compares the post-instruction achievement of first grade pupils with pre-school experiences with those who had less than 20 half days of pre-school experience.

TABLE XXXVIII

Post Measures - First Grade - Individualized Reading Pupils
Comparison of Kindergarten vs. Non-Kindergarten Experiences

Measures	Less than 20 half days	101-200 half days	F-Ratio
Gilmore-Accuracy	27.415	26.618	.288
Gilmore Rate	61.002	60.412	.040
Gilmore Comp.	20.911	20.958	.002
Gates Word Pron.	16.463	17.439	.888
Detroit Word Recog.	15.654	19.108	12.377**
Stanford Achievement			
Word Reading	24.447	24.148	.147
Par. Meaning	24.803	23.410	1.803
Vocabulary	22.292	22.009	.175
Spelling	13.387	13.722	.237
Word Study	42.994	39.295	11.265**
Arith.	40.265	38.284	2.297
San Diego Attitude	18.075	17.329	1.159
No. Books Read	10.815	17.722	8.305**
No. Books Partially Read	.896	1.220	.832
Interest			
Eagerness	3.529	3.519	.004
Maturity	3.371	3.145	1.844
D.M. Letters - Cap.	24.750	25.203	1.610
D.M. Letters - L.C.	25.234	24.252	8.086**
D.M. Isolated Sounds	34.847	34.820	.000
D.M. Initial Sounds	33.842	34.154	.089
D.M. Final Sounds	11.939	11.306	1.751
D.M. Phonograms	42.730	45.468	3.100

** Significant at the .01 level

Table XXXVIII shows that there was little consistency since the non-kindergarten pupils achieved slightly higher scores than the kindergarten group on about half of the post-measures. The non-kindergarten pupils were significantly higher to the kindergarten pupils on the Stanford Achievement Word Study Test and the Durrell-Murphy-Lower Case Letters Test.

The pupils with kindergarten experience were superior to the non-kindergarten pupils at the .01 level in the Detroit Word Recognition Test and the number of books read during a one month record keeping period.

On 18 of the measures there were slight differences between the achievement of the kindergarten and non-kindergarten Individualized Reading pupils.

There were too few of the Basal Reader pupils without pre-school experience to make a comparison of the achievement of pre-school and non-pre-school experience.

The first grade data were analyzed to determine if chronological age was an influence on the achievement of the Individualized Reading or Basal Reader first grade treatments.

TABLE XXXIX

Post-Measures - Individualized Reading and Basal Reader Groups
Comparison of Achievement by Chronological Age - First Grades

	Individualized Reading			Basal Reader		
Measures	Youngest	Oldest	F-Ratio	Youngest	Oldest	F-Ratio
Gilmore Accuracy	24.744	23.106	.954	15.733	16.745	.319
Gilmore Rate	55.552	55.765	.003	48.009	54.234	1.669
Gilmore Comp.	19.842	19.573	.053	15.680	16.289	.233
Gates-Word Pron.	16.203	13.961	3.842	9.056	9.341	.080
Detroit Word Recog.	16.447	15.489	.788	10.578	11.328	.273
Stanford-Word Read.	23.772	22.563	1.421	16.964	17.836	.469
" Par. Meaning	23.330	22.153	.814	14.529	15.735	.546
" Vocabulary	21.627	22.050	.243	17.865	18.285	.463
" Spelling	13.401	12.490	1.228	7.107	8.731	1.915
" Word Study	39.378	38.857	.140	31.727	33.218	.476
" Arith.	38.774	38.159	.141	30.138	30.588	.038
San Diego Attitude	17.705	17.283	.333	16.310	16.631	.113
Books Read	12.703	10.992	.672	4.099	3.273	.761
Books Partially Read	1.128	.897	.395	1.823	1.340	.806
Reading Interest	3.359	3.414	.076	2.699	2.825	.161
Reading Maturity	3.163	3.126	.035	2.281	2.550	1.258
D.M. Letters Caps	24.880	24.397	1.097	23.682	24.309	.637
D.M. Letters L.C.	24.243	23.918	.415	21.601	22.060	.215
D.M. Isol. Sounds	33.572	32.708	.498	23.348	24.147	.218
D.M. Initial Sounds	33.108	31.553	1.306	22.181	21.899	.022
D.M. Final Sounds	10.899	10.414	.655	6.964	5.903	2.742
D.M. Phonograms	42.163	41.078	.336	25.637	21.490	2.237

* Youngest: 5-8 to 6-0 years

** Oldest: 6-9 to 7-2 years

The results of the comparison of the youngest and oldest, excluding repeaters, within each treatment showed no significant differences on any of the measures for either the Individualized or Basal Reader treatment.

The Individualized Reading and Basal Reader groups were compared to determine if there were differences in reading interest, attitude and number of books read.

TABLE XL .

Post-Measures - Individualized and Basal Reader First Grades Comparison of Reading Interest, Attitude and Extent of Independent Reading

		Independent Reading (30 Days)		Reading Interest Scale	
Treatment	San Diego Pupil Attitude Inventory	Completely Read	Partially Read	Eagerness	Maturity
Individualized	17.467	13.185	1.210	3.465	3.209
Basal Reader	16.651	4.452	1.798	2.954	2.685
F-Ratio	3.300	47.405**	4.814*	17.113**	19.983**

* Significant at .05 level

** Significant at .01 level

The analysis reported on Table XL shows that the Individualized group rated higher on the San Diego Pupil Attitude Inventory. However, the pre-reading attitude of this group was not significantly higher than the Basal Reader pupils.

When the amount of independent reading was recorded for a 30 day period, the number of books completely read by the Individualized Reading pupils was significantly greater than was read by the Basal Reader pupils, above the .01 level. The Basal Reader group excelled in the number of books partially read, at the .05 level of significance. Most of the books selected by the Individualized Reading pupils were completely read.

The Individualized pupils rated higher than the Basal Reader pupils, at the .01 level, on the Reading Interest Scale of Eagerness to Read and Maturity of Reading Choices. The classroom teachers rated the pupils on the Reading Interest Scale, since they were able to observe the pupils' reading choices daily.

Analysis of Post-Measures: Second Grade

The results of the final tests were analyzed by the same statistical covariance program as the pre-instruction measures. For the final analysis, 12 variables were analyzed by: treatment, sex and chronological age. The Individualized treatment results including all pupils in the classes were compared with the Basal Reader classes. Then again a comparison was made between the two approaches when the Individualized Reading population was limited to the pupils who had participated in that treatment as first graders in Project 2673.

Table XLI compares the total membership of the Individualized classes and the Basal Classes on the 12 post-measures.

TABLE XLI

Post-Measures - Achievement Tests - May - Second Grades
Comparison - Individualized Reading (All Pupils) and Basal Reader Classes

	Individualized Reading		Basal Reader		F-Ratio
	N. 234		N. 159		
Post Measures	Mean	Grade	Mean	Grade	
Stanford Achievement					
Word Mean.	21.048	3.1	17.990	2.8	22.547**
Para. Mean.	34.330	3.0	30.096	2.9	8.714**
Sci. & Soc. Sci.	19.547	3.1	18.218	2.7	6.133*
Spelling	15.320	3.2	13.696	3.0	4.613*
Word Study	41.670	3.5	38.466	3.0	6.688*
Language	40.392	3.2	37.036	3.0	9.257**
Arith. Comp.	20.634	2.8	21.409	2.8	1.821
Arith. Concepts	20.216	3.0	19.958	3.0	.128
Gilmore Oral					
Accuracy	41.238	4.6	37.435	4.2	7.790**
Rate	82.640	3.5	76.939	2.5	4.020*
Comp.	27.580	4.3	25.683	3.9	6.432*
Gates Word Pron.	27.239	40+	22.751	40^{+}	30.351**

+ Possible Score

* Significant at .05 level

** Significant at .01 level

There were 1 and 330 degrees of freedom for this analysis.

Table XLI shows a significant difference favoring the Individualized treatment on all subtests except the 2 Arithmetic tests. The results on the Arithmetic Computation test favored the Basal Reader treatment but the difference was not significant. Grade levels equivalent to the adjusted mean raw scores are included to facilitate interpretation of the scores. It may be observed by relating the pre-instruction measures on Table XVI to the results reported on Table XLI that the relative difference between the Individualized and Basal Reader groups was similar. The pre-measure Metropolitan Achievement test results showed the Individualized group significantly superior to the Basal Reader group at the .01 level on Vocabulary and Spelling subtests. A difference of 2 months was found on the Word Knowledge and Spelling tests and the Individualized pupils were superior by 1 month on the Word Discrimination test. The results on the Stanford Achievement Word Meaning test showed an F-ratio 57 percent greater and .3 grade difference instead of .2 grade difference on the Metropolitan Achievement Word Knowledge test.

The Paragraph Meaning test results of the Stanford test favored the Individualized pupils significantly at the .01 level. The Individualized and Basal groups were not significantly different on the Metropolitan-Reading Comprehension pre-measure.

The Individualized pupils were superior at the .05 level on the Stanford Word Study test, a difference of .5 grade.

The difference in grade level for the Spelling test remained the same for both testing periods .2 grade but the F-ratio was much larger on the Metropolitan test.

On the Arithmetic Concept test the Basal group achieved higher on the Metropolitan test and the Individualized group was higher on the Stanford subtest. However, neither difference was significant. The Basal Reader group achieved higher on the Stanford Arithmetic

Computation test, but the difference was not significant.

The differences in results on the Stanford Social Science-Science subtest favored the Individualized pupils significantly at the .01 level, and a .4 grade.

The difference on the Stanford Language test was significant at the .05 level, .2 grade, favoring the Individualized treatment.

The Gilmore Oral Reading results were significantly different, favoring the Individualized group, with the following grade differences: Accuracy, .4 grade, Rate - 1.0 grade and Comprehension .4 grade.

The highest F-ratio was noted for the difference on the Gates Pronunciation test, favoring the Individualized treatment above the .01 level.

The results of the post-measures were analyzed by treatment and sex. The Stanford Achievement test scores for all subtests, the Gilmore Oral Reading test and the Gates Word Pronunciation test scores were analyzed to compare the Individualized boys and girls from the 1964-65 study; all the boys and girls, within treatments.

TABLE XLII

Post-Measures - Achievement Tests - May - Second Grade
Comparison of Individualized Reading (Pupils of 1964-65 Study and Basal Reader Pupils)

	Individualized Reading		Basal Reader		F-Ratio
	N 186		N 159		
Post Measures	Mean	Grade	Mean	Grade	
Stanford Achievement					
Word Mean.	21.809	3.2	17.900	2.8	32.522**
Paragraph Mean.	35.833	3.1	30.096	2.9	19.055**
Sci. & Soc. Sci.	19.745	3.1	18.218	2.7	7.327**
Spelling	16.463	3.3	13.696	3.0	14.464**
Word Study	43.103	3.6	38.466	3.0	13.704**
Language	41.549	3.4	37.036	3.0	17.504**
Arith. Comp.	21.629	2.8	21.409	2.8	.075
Arith. Concepts	20.784	3.1	19.958	3.0	2.087
Gilmore Oral Rdg.					
Accuracy	43.035	4.9	37.435	4.2	16.345**
Rate	82.624	3.5	76.939	2.5	6.020*
Comprehension	27.677	4.3	25.683	3.9	4.374*
Gates Word Pron.	28.063	40^+	22.751	40^+	40.132**

+ Possible score

* Significant .05 level

** Significant .01 level

Table XLII shows that when the pupils who had been in the Individualized program for 2 years were compared with the Basal Reader control pupils, the differences were greater, favoring the Individualized Reading approach. Grade level differences increased only when the Project 2673 pupils were compared with the Basal Reader pupils; Word Meaning - .1 grade, Paragraph Meaning - .1 grade, Spelling - .1 grade, Word Study - .1 grade, Language - .2 grade, Arithmetic Concepts - .1 grade, Gilmore Oral Accuracy - .3 grade.

TABLE XLIII

Post Measures - Achievement - May Tests - Second Grade
Comparison of Boys and Girls Within Each Treatment

	Individualized (1964-65 study)			Individualized (Tot.pop.)			Basal Reader		
Measures	Boys	Girls	F-Ratio	Boys	Girls	F-Ratio	Boys	Girls	F-Ratio
Stanford Achievement									
Word Mean.	21.720	22.130	.206	20.772	21.702	1.244	17.501	17.817	.103
Para. Mean.	34.201	37.544	4.827*	32.984	36.139	4.972*	30.027	31.148	.457
Sci.&Soc.St.	20.545	19.196	2.682	20.521	18.875	5.160*	18.569	17.587	1.748
Spelling	14.899	17.984	7.781*	14.080	16.787	7.185**	12.653	14.117	1.971
Word Study	42.354	44.070	.990*	40.899	42.937	1.757	37.886	38.424	.093
Language	39.805	43.265	5.359*	38.962	42,158	5,669*	35.716	38.080	2.724
Arith. Comp.	21.902	21.604	.079	20.719	20.898	.036	21.244	21.546	.061
Arith. Con.	21.651	20.381	1.436	20.974	20.069	.914	19.690	19.405	.071
Gilmore Oral Reading									
Accuracy	40.581	45.125	6.542*	39.017	43.454	7.378**	38.354	36.077	1.100
Rate	75.746	88.576	12.896**	77.774	87.375	8.458**	75.707	77.765	.183
Comprehen.	26.863	28.362	2.170	26.855	28.325	2.706	26.495	24.691	2.188
Gates									
Word Pron.	26.745	29.183	5.295*	26.141	28.347	4.886*	23.668	21.573	2.829

A - Pupils from the 1964-65 Individualized Reading Classes

B - All pupils in the Individualized Classes

* Significant at the .05 level

** Significant at the .01 level

Table XLIII shows that the greatest differences between boys and girls on the final achievement tests were in the Individualized treatment when all pupils were included. The girls were found to be significantly higher on 7 of the 12 subtests; three differences were significant at .01 level. When only the pupils who had participated in Project 2673 were compared, Rate of Oral Reading was significant at the .01 level.

There were no significant differences between the boys and girls of the Basal Reader classes. The pattern of post-instruction achievement of boys compared to girls was similar to the results on the pre-instruction measurue.

The Individualized total population was analyzed to compare the achievement of the youngest and oldest pupils in that treatment. The same analysis was done for the Basal Reader Second grade pupils.

Tables XLIII and XLIV show the comparison of the youngest and oldest, excluding repeaters, for both the Individualized and Basal Reader treatments

TABLE XLIV

Post-Measures - Individualized Reading - Grade 2 - (All pupils)
Comparison of Achievement by Chronological Age Levels

	Youngest (N 66)	Oldest (N.69)	F-Ratio
Post-Measures			
Stanford Achievement Word Mean.	21.874	18.960	6.864**
Paragraph Meaning	35.205	31.237	4.288*
Science & Soc. Sci.	19.107	19.564	.206
Spelling	16.054	13.193	3.820*
Word Study	43.192	36.264	11.307**
Language	40.495	37.511	3.050
Arith. Comp.	19.827	18.686	.926
Arith. Concepts	19.412	18.068	1.224
Gilmore Oral Reading			
Accuracy	42.625	35.595	9.663**
Rate	82.104	76.609	1.676
Comp.	27.204	26.359	..473
Gates Word Pron.	28.723	22.741	19.359**

Youngest 6-8 to 7-0 years
Oldest 7-6 to 7-10 years

*Significant .05 level
**Significant to .01 level

TABLE XLV

Post - Measures - Basal Reader - Grade 2
Comparison of Achievement by Chronological Age Levels

	Youngest (N 41)	Oldest (N 38)	F-Ratio
Post Measures			
Stanford Achievement Word Mean.	18.392	15.470	3.729
Paragraph Meaning	31.272	25.600	5.248**
Science & Soc. Sci.	18.333	18.166	.020
Spelling	13.996	10.240	6.145*
Word Study	38.666	32.544	5.685*
Language	37.568	34.070	2.460
Arith. Comp.	22.161	18.168	5.162*
Arith. Concepts	18.400	17.935	.081
Gilmore Oral Reading			
Accuracy	38.701	31.967	3.744
Rate	81.188	64.573	7.396**
Comp.	26.487	23.198	3.520
Gilmore Word. Pron.	22.630	20.096	1.575

Youngest 6-8 to 7-0 years

Oldest 7-6 to 7-10 years

* Significant .05 level

** Significant 01. level

Tables XLIV and XLV report that the youngest pupils in each treatment achieved higher scores than the oldest pupils, repeaters excluded. The youngest Individualized pupils were significantly superior on the 4 Stanford Achievement - Reading and Spelling subtests, the Gilmore Oral Reading Accuracy Test and the Gates Word Recognition Test.

The Basal Reader comparisons show a somewhat different pattern and generally lower adjusted mean scores and F-Ratios. The differences were not significant on the Stanford Word Meaning and Gates Word Pronunciation Tests. The Stanford-Paragraph Meaning, Spelling, Word Study and Arithmetic Computation subtests favored the youngest pupils significantly.

SUMMARY:

The analysis of covariance for the post measures data produced the following results for first grades:

At the end of January the Detroit Word Recognition Test and Durrell-Murphy Phonics Test were administered to all first grade classes. The Individualized Reading pupils achieved significantly higher than the Basal Reader pupils at the .01 level, except on the Recognition of Capital Letters test which was significant at the .05 level, Table XXIV.

The end-of-year measures showed a highly significant difference between the Individualized Reading and Basal Reader treatments, favoring the Individualized approach, at first grade level, Table XXIV.

The comparison of high and low ability levels across treatments showed the Individualized pupils significantly superior to the Basal Reader pupils on the Stanford Achievement subtests, except for the Arithmetic tests. Tables XXV - XXXVI.

A few final subtests showed the girls to be superior to the boys in each treatment, Table XXXVII.

The Individualized first grade pupils who had pre-school experiences achieved significantly higher than the non-kindergarten pupils on a word recognition test and word study test, Table XXXVIII.

There were no significant differences between the youngest and oldest pupils within each treatment, Table XXXIX.

The Individualized Reading pupils read more books and showed more interest and maturity in selection of books, Table XL.

The analysis of covariance for the post measures data produced the following results for second grades:

Individualized pupils were significantly superior to the Basal Reader pupils on most of the final tests. Tables XLI and XLII.

The Individualized girls were significantly superior to the boys on several tests. There were no significant achievement differences between the boys and girls of the Basal Reader treatment.

There were some significant differences favoring the youngest pupils in each treatment, Tables XLIV and XLV.

Teacher Ratings:

The end-of-year ratings of teachers which was a part of the cooperative research common data showed the Individualized Reading teachers to be superior to the Basal Reader teachers, as evident in the adjustment of instruction to individual learning needs and provision of appropriate materials. These special strengths of the Individualized teachers were probably the result of the method which they were oriented to and committed to follow. These features were a major concern of the workshop and the supervisory visits, as the basis of the Individualized method.

CONCLUSIONS AND IMPLICATIONS

The Individualized reading method in this study was developed through two related basic programs in Project 2673, a project in the

National Cooperative First Grade Study of 1964-65 which was sponsored by the United States Office of Education, Department of Health, Education and Welfare. This study, Project 3179 continued the systemetic word skills program and individualized story reading. The individualized intensive phonetic method was applied in a program of varied reading experiences. The significant success of the Individualized method for the second year would conclude that adjustment to levels and progress in learning is essential for the effective teaching of reading. The program which adjusts to progress in the sub-skills requires more than general techniques. Continuous evaluation of individual progress and effective teaching to specific needs is the basic philosophy of this Individualized method.

The results of the first grades in this study agree with the findings of the 1964-65 first grade study. The Individualized pupils were superior to the Basal Reader pupils at a highly significant level. The reading tests on which the Individualized program showed significant effectiveness over the Basal reader first grade method were:

Phonetic Skills and Application

Durrell-Murphy Phonics Test

- Upper and lower case letters
- Isolated sounds
- Initial and final sounds in words
- Isolated phonograms

Gates Word Pronunciation Test

Gilmore Oral Reading Test - Accuracy

Detroit Word Recognition Test

Stanford Achievement Test

- Word Test
- Spelling
- Word Study

Reading Comprehension Tests

Stanford Paragraph Meaning

Stanford Vocabulary

Gilmore Oral Reading - Comprehension

The Individualized method taught in this study and Project 2673 has been described as directly based on a comprehensive systematic program of phonetic skills: Durrell-Murphy Speech-To-Print Phonics. The teaching of phonics began with the first day of instruction, since the readiness program was basically concentrated instruction on letter names and sounds. The Individualized classes developed more phonetic skill and faster than the Basal classes, as shown by the results of the phonetic tests administered in January and the final testing in May.

The findings of Project 3179 and Project 2673 were in agreement and would indicate that an effective first grade reading program should include a comprehensive phonetic program as an essential element. Concentrated phonetic instruction should begin with the readiness program and continue throughout the year, permitting pupils to progress to more difficult skills as each is able. The less formal and more widely spaced introduction to word skills which is characteristic of the Basal Reader program would seem slower and less effective in preparing pupils for independent word recognition and spelling. With no limit, except the child's ability, placed on the amount of phonetic skill to be mastered, the pupil is free to acquire skills reserved for higher grades in the programmed Basal method.

The independence in word skills lessened the necessity of introducing many of the new words prior to independent reading. Independent word skills were essential to the individual library reading program of the Individualized method since there wasn't time for the teacher to introduce most of the words. Pupils were motivated by their self-discovered independence to read more and varied books. The number of books read and maturity of choice, among the Individualized pupils, were significantly superior to the Basal reader pupils. The reading of library books was a basic element in the program since these books were the primary source of instructional materials.

The quality, quantity and interest in written expression were greater in the Individualized classes, as observed from writing samples, unassigned written activities, teachers' reports and pupils' remarks during both studies.

It can be concluded from the analysis of these data that the Individualized method served the high and low ability groups more effectively than the Basal Reader program, at first grade level. The implication would seem to be that the Basal Reader program might serve the pupils more effectively if the basic features of the Individualized method were incorporated. An early intensive phonetic program provides more effective word mastery than does the formal Basal Reader program. Individualized library reading with greater flexibility in class organization provides a motivated program for more and varied independent reading.

Pupil-teams and individual learning constituted the major organizational patterns for the Individualized method, providing several types of grouping by which each pupil's needs were more directly served than by the ability grouping method. From the reports of teachers and pupils, this system of classroom organization was effective and enjoyable. The results of this study and Project 2673 would indicate that the pupil-team type of organization could be an effective pattern of grouping for any reading method.

There was some evidence that pre-school experiences provided readiness for word recognition ability for the Individualized pupils, but the difference in chronological age did not affect the achievement of either the Individualized or Basal reader pupils.

The Individualized reading method with the same philosophy, techniques, patterns of organization and types of materials was effective at second grade.

The second year Individualized pupils had shown very significant superiority in achievement over the Basal Reader pupils on the final test results of Project 2673 as first graders. These same pupils in second grade were significantly superior to the Basal Reader second grade pupils on the _Word_ and _Spelling_ tests of the _Metropolitan Achievement Test_, in September.

The Individualized method tended to serve the pupils more effectively than the Basal Reader method at second grade level, as evidenced by the increased F-ratio and grade differences between the treatments on the Stanford Achievement Word Meaning and Paragraph Meaning subtests. The difference on the Metropolitan Reading Comprehension test was not significant in September. However, reading comprehension as measured by the Stanford Achievement Paragraph Meaning and Social Science and Science subtests, and the Gilmore Oral Reading Comprehension test was significantly different at the .01 level favoring the Individualized treatment. The grade level difference between the Individualized and Basal Reader groups remained the same or increased in favor of the Individualized group, on the final tests. When only the Individualized pupils who had participated in the program as first graders were compared with the Basal Reader pupils, the differences in F-ratios and grade levels increased, favoring the Individualized treatment. The results on the Stanford Arithmetic test favored the Individualized treatment slightly in contrast to the pre-measures which showed the Basal Reader group to be slightly superior. Neither the pre-measure nor post measure difference was significant.

The achievement of at least two-thirds of the Individualized pupils in the second grades probably would have been higher if more reading materials had been available in the classrooms.

The grade level differences favoring the Individualized group over the Basal Reader groups at the end of grade two for all second grade Individualized pupils, and for pupils from Project 2673 were:

Measures	All Ind. Pupils Project 3179	Project 2673
Stanford Achievement Test		
Word Meaning	.3 grade	.4 grade
Paragraph Meaning	.1 grade	.2 grade
Science & Social Science	.4 grade	.4 grade
Spelling	.2 grade	.3 grade
Word Study Skills	.5 grade	.6 grade
Language	.2 grade	.4 grade
Arithmetic Computation	.0 grade	.0 grade
Arithmetic Concepts	.0 grade	.1 grade
Gilmore Oral Reading		
Accuracy	.4 grade	.7 grade
Comprehension	.4 grade	.4 grade
Rate	1.0 grade	1.0 grade
Gates Word Pronunciation	5 words	6 words

A likelihood ratio criterion was not determined for the validity of a true difference between the initial and final test results. However, the differences between the pre-measures and post measures show that the Individualized pupils at least maintained their relative superiority which was established in September. It can be concluded from these results that the Individualized pupils were served as effectively as the Basal Reader pupils in all areas measured. These data strongly indicate that the reading comprehension and word study skills were better developed through the techniques and materials of the Individualized reading method.

Independence and interest in locating materials for pupil speciality projects and oral and written reports, as well as, creative language expression were better developed among the Individualized pupils, as reported by teachers.

The interest of teachers to continue with the program and new teachers to teach by the method has expanded the Individualized method in Vermont and would indicate its effectiveness.

The report of pupils and parents have been favorable to the method.

A summer workshop will be conducted at Johnson State College in 1967 to meet the requests of 60 teachers who are interested to teach by the Individualized method.

Teachers and pupils have expressed satisfaction in the freedom and independence provided for learning. Also, the organization makes attention to individual needs and abilities and time for working with individuals available. The emphasis on content and vocabulary skills with varied materials at the primary level was popular among teachers and pupils.

It can be concluded that the approach is an effective method in grades one and two and probably should be extended to other grade levels.

The improvement of teaching ability among the Individualized teachers and requests for help from other teachers would indicate that concentrated practical in-service education followed by systematic supervision and evaluation is effective in improving classroom teaching and is acceptable to teachers.

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